

Table of Contents

1. Message
2. Principal's Annual Report
3. Ph.D. Abstracts
4. Academic Association Activities (Shift-I)
5. Academic Association Activities (Shift-II)
6. Groups and Movements (Shift-I)
7. Groups and Movements (Shift-II)
8. English Articles & Poems
9. Tamil Articles & Poems

Rector's Message

REACHING OUT IN LOVE AND HOPE

Resilience, the ability to bounce back in the face of setbacks and difficulties, has been the hallmark of Sacred Heart College in the past academic year. The coronavirus pandemic has disrupted not only our teaching and learning, but has also wreaked havoc to the lives and livelihoods of our students, staff and their families. Yet, what has emerged even stronger in these hard times is the collective and courageous spirit of our staff members who reached out to students through creative and committed accompaniment through online, offline and hybrid academic, research and examination activities and programmes.

We must thank God, and appreciate the inspirational leadership of Principal Fr. Maria Antony SDB and the strong support leadership team of Fr. Maria Arokiaraj SDB (Addl. Principal), Fr. Praveen Peter SDB (Controller of Exams), Vice Principals (Mr. Xavier Rajarathinam, Fr. Theophil SDB, Mrs. Mala), IQAC team, Fr. Gandhi SDB (Administrator), HoDs, the Salesian Community that includes Frs. Borg, Angelo, Andrew, Ambrose, Adaikalam and Matthew, and other teaching and non-teaching staff who took initiatives, risks and responded in love at various levels. Through this College Annual Magazine, Prof. N. Arul Doss and the editorial team have portrayed beautifully, in words and images, the regenerative spirit prevailing in the Sacred Heart family.

Remarkably, reaching out has not been limited to the academic boundaries. True to the spirit of our father and founder Don Bosco who courageously responded in times of crisis to support the poor, our reach out activities in terms of scholarships and relief materials of food and medicine have in no way been reduced because of the COVID-19 crisis. In fact, we have doubled our efforts and scaled up the number of beneficiaries to include transgenders, residents of Idhaya Nagar, children and families of administrative staff and many more poor and needy people in the neighbourhood. We must place on record the manifold compassionate activities done during this crisis by our NCC and NSS units as well as the DB Centre and College Extension Works team led by Fr. Daniel Ambrose SDB. They stand as our role models and inspiration.

God helps people through people. May the spirit of generosity and hope continue to fill our campus as we march towards the Platinum Jubilee of our College in the year 2026. May the power of the Sacred Heart and protection of Our Blessed Mother overwhelm every difficulty we may face and give us the courage to move forward.

Fr. John Alexander SDB

Rector & Secretary

Principal's Message

Dear Readers

Greetings from Principal's desk! Academic year 2020-21 was unique and yet a challenging one as far as academics and administration are concerned. The days were filled with a lot of uncertainties, ambiguity and anguish to a considerable extent. But God in His mercy and compassion led us through during this extraordinary situation and made many activities possible.

It is often said "Give me a copy of your college magazine, I will tell you about the quality of your college". I rather strongly believe in this statement for a magazine carries the achievements of the institution reflecting its core values, vision and mission. "Fortune favours the Brave" is an age old saying which aptly fits Sacred Heart College. There is nothing and absolutely nothing including Covid-19 that could prevent our institution from rolling forward, going on boldly from one achievement to another leaving the onlookers spell bound.

People reading this magazine will realise the tremendous achievements made by the institution during this pandemic. Our institution has been simply unstoppable in its progress as it has been actively involved in various activities that had provided perfect platform both for the staff and students to exhibit their talents. To mention a few achievements... attainment of Extension of Autonomy from UGC for another 5 years, entire revision of syllabi, Covid relief work by various stakeholders of the college, technology driven administration, seminars, webinars, publication of researched articles in Scopus and other reputed journals', extension works etc. These and other activities stand as a witness to the monumental efforts taken by the educative community to make the college an institution to seek after by the people.

As I pen these lines, I am indebted to the management for solidly backing up all the initiatives of the college, the faculty and non-teaching staff who passionately worked hard day in and day out and for adapting to the new normal mode of teaching. My special appreciation to the technical team of the college for developing and providing us with a software to meet the challenges of virtual teaching.

Dear friends mastering resilience is not letting failure control one's mind set. As Wood Wilson says "The difference between a strong person and a weak one is one that the former does not give up after defeat." I strongly believe that the Sacred Heart Educative Community belongs to the strong group which does not give up in the midst of challenges and difficulties. We find new ways and means of responding to these challenges. That's what we have proved in 2020-2021. We have found new opportunities to upscale our skills and knowledge during this pandemic. We shall ever stand up to these and other challenges in the future in true sports person's spirit.

The Book of Psalm (Ps. 9,1) says “I will give thanks to you, Lord, with all my heart; I will tell of all your wonderful deeds” My heart overflows with sense of gratitude to God Almighty, Our Blessed Mother, and St. John Bosco for their blessings, protection and guidance. I wish to thank the management, faculty, staff and students for their unstinted support during the year.

May God bless Sacred Hearts.

Rev. Dr. D. Maria Antony Raj, SDB

Principal

Additional Principal's Message

Dear Friends,

Greetings to you. Happy to meet you through this magazine.

You are fondly called "The Corona Batch." But, Corona has taught you many new things!

There are so many heart wrenching stories during this pandemic especially, during the current second wave of COVID19. We hear of many deaths, burials/cremations and so much of hardship for the living. Among all these negatives, there are so many heart-warming stories too. As they say, "the worst situations bring the best in us", we see that the humanity is not dead still. Just look around:

1. An unnamed couple just called the Government Medical College and ESI hospital in Coimbatore and donated 100 pedestal fans for the COVID patients. They pledged Rs.2.2 lakh worth of their jewels to make this donation without any publicity.
2. Janardhanan, 63, a beedi worker, from Kannur, Kerala donated his entire savings of Rs. 2 lakh to the Kerala's Chief Minister's fund so that the poor could get free vaccines. In his own words "...Why should I sit on my money when others need to get vaccinated? ...so that those who do not have the money should get free vaccines."
3. Mohammad Shareef, UP, never got to buy his son, who was killed in a riot. He has spent the last 27 years burying the unclaimed sons and daughters of thousands of other families.
4. For three decades, Abdul Malabari from Gujarat has been an undertaker for unclaimed bodies. He is burying people whose families wanted to say goodbye to their loved ones but couldn't because of COVID.

There are many more such positive stories around us. The negativity created by COVID cannot take away the deep humanity, which is still in all of us. We can make a difference in the lives of people around us by stretching our hands to the needy, living next door.

Dear students, this is what you have seen and been taught in this college. You have been doing this already. The theory is over; now, it's time for the practicals.

Let's do what we can, with the resources we have.

Remember, "The measure you give is the measure you receive."

Let's give cheerfully! Together, let's win over COVID!

Rev. Dr. K. A. Maria Arokia Raj SDB

Additional Principal

Editor in Chief Speaks

The College Annual (2020-2021) has been brought out on time in spite of the difficulties posed by Covid-19. The Novel Corona Virus has crippled our movements but not our minds. The deadly virus has necessitated social distancing but not distancing from social responsibility. In fact the killer virus has been a blessing in disguise in a social sense as it has made everyone empathize with the have not's and extend possible helps.

The editorial board throws open a cordial welcome to the new Rector and Secretary Rev. Dr. John Alexander. The priest with a compassionate heart has also plenty of experience in the entrepreneurial acumen. We do hope that his role in Sacred Heart College will bring in a reformation in spirituality, teaching and learning and administration.

The staff has metamorphosed their teachings into online and has risen to the needs of the signs of the time. The college reports will real a fact that the staff has been successful in their projects sanctioned and the college has rendered humanitarian service of sufficing the hunger of the nomads. The association activities of many departments shed light on giving Significance to the mental health of the students as they were self-quarantined due to restrictions.

The Board lauds the NSS volunteers and the programme officers, NSS cadets and their NCC officer for their invaluable services during the pandemic. They mooted awareness on wearing face mask, maintaining social distancing and other safety measures in Tirupattur town.

The editorial Board also happily savours here the visit of the Autonomy Extension Review Committee during 5th and 6th February 2021 and the subsequent outcome of the visit i.e. Extension of Autonomy till 2025.

The Editorial Board also records here that the all the departments have revamped the syllabi certainly suiting to the demands of the current job market and the skill and needs of the students.

The articles of staff and students focus on immunity and immunity boosting food which are the need of the hour.

The Editorial Board sufficiently and richly thanks the Principal, the staff and the contributors to the college annual. Staff in-charge for gathering articles, fellow editors and the technical team deserve great appreciation and whole hearted gratitude. We look forward to more support and contribution from all to you.

Prof. N. Arul Doss

Editor in Chief

EDITORIAL BOARD

1. Prof. N. Arul Doss
2. Prof. V. Madhan Kumar
3. Dr. G. Mohan Gandhi
4. Dr. A. Dhayal Raj
5. Dr. V. Collins Arun Prakash
6. Mr. J. Antony Amalraj
7. Mr. G. Sounder



Sacred Heart College (Autonomous), Tirupattur - 635601

70th College Day Annual Report: 2020-2021

Good morning to one and all and a pleasant word of greetings and welcome to all the delegates and guests for the 70th College Day celebrations.

If anyone had ever told us that the succeeding year would be spent in despair and isolation, nobody would have believed it. But it happened in front of our eyes, how the panic and frustration took over our lives and of many others in the last year. Yet, **“I will never leave you and nor forsake you”** assures our Lord and true to his promise He carried this great institution during this challenging time of pandemic.

With the blessings of our Blessed Mother and our founder and Father St. John Bosco we were able to sail through the storm and emerge successful in delivering quality education to our young people. In this regard I am very grateful for the support rendered by the various stake holders of the College during this crucial period. I owe my gratitude to **Rev. Fr. K. M. Jose, SDB**, the Provincial and Chairman of this great institution for his unstinted support and encouragement in every endeavor of this institution. I am bound to express my gratitude to **Rev. Dr. C. Antonyraj, SDB**, the former Rector and Secretary of this College for his valuable guidance and support towards the growth of this Institution for the past six years. As he takes up his next assignment, we would like to thank him profoundly for what he has been to this institution and wish him all the best in his new office. I wholeheartedly welcome **Rev. Dr. John Alexander, SDB**, the new Rector and Secretary of this college who assumed the office in the month of May 2020. I thank him profoundly for his marvellous support and leadership in lifting this institution to greater heights.

I take this opportunity to thank **Rev. Dr. K. A. Maria Arokiaraj, SDB**, for his benevolent help and leadership in administering the affairs of Shift-II. My gratitude to **Rev. Dr. Praveen Peter, SDB**, the Controller of Examinations, and the Vice-Principal (Administration Shift-I) for his help in the excellent conduct of examinations through both online and offline mode and for publishing the results on time. I also congratulate and thank **Rev. Dr. G. Theophil Anand, SDB**, the Vice Principal (Administration Shift-II) on conducting the online and offline academic programmes successfully throughout the academic years. I am grateful to the **Vice Principal (Academics)** of both the shifts for coordinating the online and offline classes throughout the year. My sincere appreciation to the **Deans, HODs** of both the shifts for rendering their support in the smooth and successful conduct of the classes, examinations and other activities throughout this year. I am greatly indebted to all the **staff members** both **teaching and non-teaching** for making this year a memorable and fruitful one.

I deem it a real privilege and honour to present before you the report of our College for the academic year 2020-2021.

Notable Initiatives

The success of any college stems from within. Values, morals and resourcefulness are the primary elements which make a college noteworthy and remarkable. The following are the various initiatives undertaken during the academic year 2020-2021.

Sacred Heart Research Grants

As a noble gesture of encouraging staff, research scholars and students in research, Sacred Heart College continued its tradition of awarding the researchers with the following research grants.

The list of funding under various categories were as follows:

- **Don Bosco Grant** for **13** teaching faculty to the tune of **Rs. 8,50,000/-** of which **Rs.4,63,000/-** was disbursed as the first instalment. In addition to this, **Rs.1,90,000/-** was released as a second instalment for the staff members who had already received this grant.
- It is noteworthy that a new research grant under the aegis **Rev. Fr. Carreño Grant** was initiated for doctoral research scholars. This year, a total of **11 Ph.D. Scholars** benefited with an amount of **Rs. 3,75,000/-** under this initiative.

Green Initiatives

Sacred Heart College, under its green initiative project makes it a point to be accountable for sustainable development. The college takes the lead in rethinking its environmental culture thereby striving to create new paradigms for solving problems that are local, national, and global. A green lush herbal garden now decorates the campus as a symbol of green initiative.

The Youth for Social Responsibility (YSR) of the College along with the district administration has taken the initiative to plant **1500** saplings as an attempt at afforestation in this region. **The District Collector, Mr. M. P. Sivan Arul, IAS** inaugurated the event and congratulated the participants of the programme.

Sacred Heart Young Innovator Award (SHYIA) – Second Annual Competition

Innovation is the unrelenting drive to break the status quo and venture where few dare to go. The purpose of the Sacred Heart Young Innovator Award is to motivate students to work together across disciplines, departments or specializations and come up with new, constructive ideas. This year the event attracted 81 contestants from various institutions to display their prowess in innovation and invention.

MOODLE Platform for Learning

“An investment in knowledge pays the best interest as the only person who is educated is the one who has learned how to learn and change”. With the advent of the

MOODLE Platform for learning, Sacred Heart College, has created unique learning methods which include competency-based education, mobile learning, accessible grade books, interactive online classrooms, and much more. This learning platform is designed to provide educators, administrators and learners with a single robust, secure and integrated system to create personalized learning environments.

Emphasis on Online Courses, SWAYAM etc.

Online education is growing rapidly. It allows anyone sitting anywhere to learn a new set of skills or hone their existing skills. It has transformed traditional teaching and learning. At the college, it is being planned that students will be offered transferable credits as part of their online learning on successful completion of approved courses offered by **SWAYAM, MOOCs** and other online platforms as approved by the department. During the pandemic, as many as **320 students** successfully registered themselves for various online programmes and are due to take their exams.

Contribution of Sacred Hearts towards Covid -19 Relief Works

Certain emergencies very powerfully invoke our inner strength and the outbreak of Covid-19 is no exception to it.

The Sacred Heart College Management responded to the needs of the poor and needy once again. The management, with the assistance of grass root workers identified **500** extremely poor families from Self Help Groups, Sanitary Workers, and other daily wage earners from **13 villages** consisting of 4 blocks, namely Tirupattur, Jolarpettai, Natrampalli and Kandhili. The District Collector **Mr. M.P. Sivan Arul, IAS**, graced the occasion, spread awareness and distributed food materials kit worth of **Rs. 2.5 lakhs** to the beneficiaries. Former Rector and Secretary **Rev. Dr. C. Antonyraj, SDB**, presided over the programme. **Rev. Fr. S. Henry Daniel Ambrose, SDB**, Director, Extension Education, **Rev. Dr. Gandhi Kallarasan, SDB**, Administrator coordinated the event and **Rev. Dr. D. Maria Antony Raj, SDB**, Principal graced the occasion.

Corona Relief Work by Sacred Heart Alumni Association

The Alumni association of Sacred Heart College actively engaged in helping the needy people in and around the Tirupattur district and distributed essential commodities to hundreds of families. The association has also contributed **Rs.1,50,000/-** towards the corona relief activities to **493** families.

NSS Covid-19 Warriors

NSS Programme Officers and NSS Volunteers of Sacred Heart College, Tirupattur, volunteered themselves to be Covid-19 Warriors in association with Tirupattur District Police in various duties related to prevention and containment of Covid-19 and enforcement of lockdown in Tirupattur District for 48 days i.e., from 02.05.2020 to 18.06.2020.

The NSS Volunteers worked along with Tirupattur District Police in ensuring social distancing norms in public places like markets, bazaars, shops, banks, check posts, ration shops, etc. They also helped the police personnel in strictly enforcing the rule of wearing masks in public places during the lockdown period. The NSS volunteers also assisted at the Taluk Police Station.

Sacred Heart Times, the e-News Letter

In the age of technology, there is a constant access to vast amount of information. This world needs something more than good works. It needs good news with good works. The Sacred Heart Times is an e-Newsletter, that acquaints the reader with the various events, happenings and events in the college. I am happy that the editorial team has brought out four successful editions of the Sacred Heart Times edition on time even during the period of pandemic.

Online Classes (Due to Covid-19)

The sudden outbreak of Covid-19 in 2020 has impacted us in many ways. One such thing which got adversely affected by this pandemic was the mode of teaching. The moratorium by Government during the pandemic has led to the complete shift in learning from offline to online. This sudden shift in instruction to the virtual mode was quite challenging to both teachers and to the students. However Sacred Heart College in Tirupattur devised its way out of this challenge. Online FDP was conducted first for the faculty about the different online teaching platforms and also about how to handle them. Later a separate session was conducted on the same for the students.

When both the teachers and the students gained familiarity, the online classes for the new academic year started in full swing. The college has also appointed a team to exclusively monitor and offer help to the teachers as well as students facing issues during the online classes.

Study materials and reference materials were uploaded in Moodle and were made available to the students by the respective course teachers of all the departments.

A separate schedule was prepared for the conduct of online classes ensuring both comfort and feasibility.

Online Semester Examinations

Abiding by the rules imposed by the Government, our College started conducting regular classes and exams online. At the end of the semester the college adopted online semester examinations. The whole software platform required for the conduct of online examinations was entirely developed in-house. I congratulate the technical team who worked day in and out to make this online venture possible.

The COE and his team had taken all possible measures to educate both students and faculty about this new normal mode of examinations. It was carried out as per plan without any hurdles both to the students and staff.

Internal Quality Assurance Cell (IQAC)

The IQAC plays a significant role in ensuring the quality by decentralizing the roles and responsibilities; developing and implementing quality check mechanisms and participatory management in administration. It also reviews the teaching-learning process at periodical intervals.

The Significant Activities and Contributions made by the IQAC are as follows:

- The mid evaluation of the departments was conducted in December 2020.
- The IQAC Year Plan for the academic year 2020-2021 was planned and various responsibilities were assigned to the members.
- The teaching plan of the entire faculty is now made available in the college portal for the students to view.
- IQAC has meticulously assessed the Faculty Evaluation by students at the end of odd and even semesters. The analysis of the feedback was communicated to each faculty by the Principal.
- The Academic Reformation Committee finalized the structure of PG and UG Curriculum.
- Sacred Heart College (Autonomous), Tirupattur is a NAAC Mentor Institution through UGC Paramarsh Scheme. The activities of the scheme were:
 - Conducted a National level Workshop on **“Understanding the Accreditation Process in View of the New RAF through UGC – Paramarsh Scheme”** from 7th July 2020 to 11th July 2020 by online mode for the IQAC members of the Mentee institutions.
 - Organized a National level Workshop on the theme **“Quality Assessment, Enhancement and Sustenance in Higher Education in View of New RAF of NAAC”** from 15th July 2020 to 18th July 2020 by online mode for all the faculty members of the Mentee institution.
 - Conducted a National Level Workshop on **“Assessment and Accreditation Process in View of New RAF of NAAC - Experience Sharing”** by IQAC coordinators of leading institutions from 20th July 2020 to 24th July 2020 by online mode for all the Faculty members of the Mentee institutions.
 - The first year progress report of the Paramarsh Scheme was submitted for the amount **Rs. 4,26,831,84/-** to the UGC on 12th November 2020.

- Organized a State level Workshop on “**Understanding the Accreditation Process in View of New RAF under Paramarsh Scheme**” for all the faculties of Shanmuga Industries Arts and Science College, Tiruvannamalai on 17th March 2021.
- The AQAR for the year 2019-2020 was submitted on 23rd December 2020.
- Examination Manual was prepared and ready for approval by the IQAC.
- The Proforma for the Autonomy Extension was prepared and the visit was scheduled and organized by IQAC.
- Applied for NIRF 2021
- Applied for MHRD India Today Ranking
- Applied for AISHE 2021
- Assisted in the Academic Audit conducted for all the Departments.
- The Annual Evaluation of the Departments will be conducted in May 2021.

Data Centre and Online Admissions

Nothing is impossible for a valiant mind. A team of technocrats ably headed and guided by **Rev. Dr. D. Maria Antony Raj, SDB**, the Principal has made the impossible, possible. When the world came to a halt in terms of mobility and travel, we in Sacred Heart College boldly went ahead in making the admissions online and offered admissions to 1600 candidates in 24 disciplines. Application forms, fee payment, selection letter and admit card were all received and issued online and the state-of-the-art data centre established in the College saw to the minute details of all these processes and very successfully completed the admission process. My heartfelt appreciation and congratulations to the entire technical team which helped the institution to stand tall when it demanded the most.

Intellectual Property Rights (IPR) Cell

Sacred Heart College is a nodal center for registering IPR related claims duly attested by the Government of Tamil Nadu and under its auspices the following programmes were conducted in order to impart awareness and active participation in IPR related ventures.

- The IPR cell had facilitated the filing of 2 patents.
- The cell had facilitated the dissemination of knowledge by conducting state level webinars on **3rd June 2020, 31st January 2021 and 31st March 2021.**

New HODs

Leaders become great not because of their power but because of their ability to empower others. They have this special knack of getting people to do the greatest thing.

I congratulate the new Heads of Depts. **Rev. Dr. John Alexander, SDB**, - Life Education, **Rev. Fr. J. Andrews Raja SDB**, - Social Work, **Dr. A. Jayaprakash** - UG Biochemistry for accepting new portfolios as Heads of the Department and taking up the responsibility to guide, lead, influence and mentor their Departments.

New Teaching and Administrative Staff

Education is not the filling of a pail but the lighting of a fire. Teachers through their dedicated and meticulous work spark the brains of this generation which will change the world. To assist us in this noble mission we have the following new members added to our family

I welcome the **Rev. Dr. John Alexander SDB**, who has taken over as the HOD of Life Education and I would like to thank **Rev. Dr. C. Antonyraj SDB**, who served as the HOD of this department in the previous years.

I wholeheartedly welcome Rev. Fr. Angelo Joseph, SDB, of Management Studies, Dr. S.P. Balamurugan, Dr. A. Malathi of Tamil, Miss. L. Immana, Mrs. U. Maria Liny Jenifer, Mr. P. Anbarasan, Dr. P. Helan Hema of English, Dr. C. Pandeewaran of History, Miss L. Divya of Mathematics, Mr. M. Santhoshkumar of Computer Science, Mr. S. Arul Prabakaran, Dr. Sujatha of Counselling Psychology and Mr. S. Anthony Raj of Communicative English. I wish them all the best in their career.

At this juncture, I thank the staff members who served this institution and have left us for various reasons and I wish them all the best for their future career.

New Doctorates

The pinnacle of educational attainment is the doctoral degree. It is the most advanced degree one can earn in this lifetime. It demands tremendous effort and enormous time investment to earn a doctorate. I have immense pleasure in congratulating the new doctorates.

1. Dr. S. Alphonsa Mary – Asst. Prof., Dept. of English Shift-I
2. Dr. P. Saravanan - Head, Dept. of B.Com (CA)
3. Dr. R. Ananthalakshmi - UG Head, Dept. of Biochemistry
4. Dr. A.C. Gomathi - PG Head, Dept. of Biochemistry
5. Dr. B. Seenivasan, Asst. Prof., Dept. of B.Com (CA)

The Sacred Heart family takes pride in congratulating the following budding new doctorates who successfully defended their thesis and were awarded Ph.D. in their respective fields. I congratulate the supervisors for their accompaniment, and I wish the new doctorates all the best in their future endeavors.

S.No	Name of the Ph.D. Scholar	Name of the Supervisor	Department
1	Dr. M. Sankar	Rev. Dr. A. Maria Soosai	Tamil
2	Dr. J. Kaladevi	Dr. G. Mohan Gandhi	Tamil
3	Dr. P. Joseph Baskaran	Dr. A. Xavier Susairaj	Economics
4	Dr. A. Arockia Selvan	Dr. A. Xavier Susairaj	Economics
5	Dr. B. Seenivasan	Rev. Dr. D. Maria Antony Raj	Commerce
6	Dr. A. Antony Raj	Dr. R. Murali	Mathematics
7	Dr. A. Ponmana Selvan	Dr. R. Murali	Mathematics
8	Dr. P. Divyakumari	Dr. R. Murali	Mathematics
9	Dr. V. Vithya	Dr. R. Murali	Mathematics
10	Rev. Dr. S. John Borg	Dr. G. Britto Antony Xavier	Mathematics
11	Dr. S. Gokulakrishnan	Dr. G. Britto Antony Xavier	Mathematics
12	Dr. G.Uma Maheswari	Dr. V. Balaji	Mathematics
13	Dr. S. Sudhakar	Dr. V. Balaji	Mathematics
14	Dr. J. Arumugam	Dr. A. Dhayal Raj	Physics
15	Dr. A. Sakthisabarimoorthi	Dr. M. Jose	Physics
16	Dr. A. Saranraj	Dr. S.A. Martin Britto Dhas	Physics
17	Dr. J. Thirupathy	Dr. S.A. Martin Britto Dhas	Physics
18	Dr. R. Ananthalakshmi	Dr. S.R. Xavier Rajarathinam	Chemistry
19	Dr. A.C. Gomathi	Dr. S.R. Xavier Rajarathinam	Chemistry
20	Dr. J. Merline Florence	Dr. L. Ravi	Comp. Science

Publication of Articles in Books and Journals

Francois Arago once rightly remarked, “To get to know, to discover, to publish- is the destiny of a scientist”. I would like to tweak this dictum, “to get to know, to research and to publish- is the destiny of every inspiring teacher”.

Since academic success depends on research and publications, Sacred Heart College leaves no stone unturned to inspire and encourage all the faculty members and students to publish their work. This year the staff members of Sacred Heart College have collectively published **224** articles in various journals.

Projects

Project enables a person to develop an inquisitive mind, always wanting to find out why things happen the way they happen. I congratulate the faculty members who have been sanctioned projects from the following funding agencies:

i) FIST Funding

I am happy and proud to announce to you that the College has received the second installment of **Rs. 38.25 Lakhs** from the Department of Science and Technology (DST), New Delhi under the Fund for Improvement of S & T Infrastructure (FIST). I congratulate the faculty team on overseeing the implementation of the same.

ii) IMPRESS funding from ICSSR

I congratulate **Dr. A. Xavier Susairaj**, Head and Associate Professor of Economics on having successfully obtained a grant of Rs. 4,20,000/- from Indian Council of Social Science Research ICSSR, New Delhi.

I also congratulate **Dr. Nahren Manuel**, Assistant Professor, Department of Chemistry on receiving Rs.4,00,000/- as a research grant instalment for this year.

I also congratulate **Dr. S. Sasikumar**, Head & Assistant Professor, Department of Management Studies on receiving Rs.1,26,667/- a grant for Organizing Conference (GOC) from All India Council for Technical Education (AICTE) New Delhi

Conferences and Seminars

Conferences, Seminars and Workshops are an innovative and welcome step towards modern education. They not only provide a platform for the learners to learn new aspects but also help them to get equipped with different perspectives and the latest information. The pandemic has opened a new door for disseminating knowledge and information and I am very glad to announce that about **124** webinars and seminars were conducted by various departments during this academic year.

Memorandum of Understanding

Collaborations can lead to meaningful partnership journeys in the life of an institution. We at Sacred Heart College strive to make no mistake in this and attempt to widen the wings of collaboration and partnership. I am happy to mention that various departments have successfully signed MoUs with some leading institutions to widen their area of research and consultancy.

1. Marudhar Kesari Jain College for Women, Vaniyambadi.
2. Labgenius Diagnostics Private Limited, Bengaluru.
3. Don Bosco College, Dharmapuri.

4. iPRIMED Education Solutions Private Limited, Bengaluru.

5. ColourMee, Hosur.

Staff Achievements

I congratulate **Dr. K. Parthibaraja**, Assistant Professor, Department of Tamil Department on his stunning achievement of publishing **12 books** in one go. I wish him many more success in his career.

Students' Services

Mid-day Meals Scheme

One of the well-intentioned schemes of this institution is providing mid-day meals to the deserving poor students across disciplines. As many as **153 Students** benefitted this year and I wholeheartedly thank our benefactors for supporting this noble venture.

Counselling Centre

Wellbeing cannot exist just in the abstract, it is a matter of wholesomeness. This institution strives to bring in wholesomeness in the lives of all the students through proper guidance and counselling carried out by the counselling centre. This year **530 Students** were offered counselling and I thank **Ms. Latha Munusamy** and her team for their tireless efforts.

Placement Activities

The grade and quality of the college is measured through the quality output of the students. The final year students of both UG and PG were offered proper training for facing interviews and as a result, till date **81 Students** were successfully placed in **13 Companies** and many are to be placed further through future campus drives. I congratulate the placement coordinator and the entire placement cell on their notable achievement.

IGNOU

The portals of education can never be shut for an aspiring learner and this is made indeed a reality through the distance education offered through IGNOU wing of the college. This department has successfully conducted **19 Courses** thereby educating **120 Students** this year.

Significant Events

Autonomy Extension Committee visit 5th and 6th February 2021

This institution has the tag of one of the oldest autonomous colleges in whole of India and this year we had the visit of the Autonomy Extension committee on 5th and 6th February, 2021 by a team of experts. Various achievements of the College during the past five years were showcased and the committee expressed its appreciation and suggestions for further

development of the College. As a successful outcome of this visit, the College was granted the extension of autonomy for the next five years up to **2024-2025**.

Academic Council Meeting

The business brought forward by the various boards of studies were approved by the Academic council held on **19th December 2020**. The council approved the syllabus and other curricular modifications suggested by the departments.

Academic Audit

Quality attainment and sustenance are the watchwords of an institution of higher learning and the departments periodically conduct the academic audits with the experts from their own field to assess and remark about the academic standards maintained. This fruitful exercise was successfully undertaken and completed by all the departments which were unable to complete in 2019-2020.

Revision of Syllabi

In the prevailing pandemic scenario, the College has decided to undertake the revision of syllabi for all the disciplines to keep abreast of the changes in the world of higher education. The new syllabi will come into effect from June 2021 after the due approval of the academic council.

Outreach Programmes

The impact of education is to be felt in the neighbourhood, thus translating the theory into practice. With the motto of “Lab to Land”, the Outreach programme was conducted for all the second year UG students and **1249 Students of 19 Departments** enthusiastically participated and benefitted from this programme.

The Alumni Meet

“Nothing is bothered about an Institution more than its alumni” says the notable software icon **Mr. Narayana Murthy**. True to his opinion, our alumni are the gems in our crown and a nostalgic meeting of our alumni was held on **31st January, 2021**. Amidst the threat of the pandemic, our alumni dared to meet through both online and offline modes and shared their sentiments and suggestions with their alma mater. As a significant outcome of this meeting, efforts are being made to create alumni chapters in various places to strengthen alumni participation and engagement.

Retreat for Teaching and Non-Teaching Staff

Inner strength had been our mantra behind all our success. The institution was keen to provide opportunities to connect oneself with the divine and with that in mind retreats were conducted for staff and students

On 5th March, 2021, a one day retreat was conducted for Catholic and Christian students. **Rev. Fr. Jesudass Periyamayagam, SDB**, animated the students with his personal experience and stressed the importance of spiritual experience.

On 6th March, 2021, retreat was conducted for all the staff (both teaching and non-teaching) of Sacred Heart College with the theme “Seek while God may be found”

FDP on National New Education Policy 2020

A Faculty Development Programme was organized on **New Education Policy 2020** on 16th October, 2020 between 11:30 a.m. and 1:30 p.m. Renowned Educationist **Rev. Fr. Joseph Xavier, SJ**, was invited as the resource person for the virtual programme. The Heads and Faculty members of various departments of the institution actively participated in the programme.

Fr. Joseph Carreno Memorial Lecture

The Department of Life Education, Sacred Heart College (Autonomous), Tirupattur organized a memorial lecture titled ‘**What is God doing through the Corona Virus Pandemic?**’ on **9th October, 2020**. The keynote address was delivered by **Rev. Dr. John Alexander SDB**, Rector and Secretary of the institution.

Patent in the official Journal of Patent Office, Intellectual Property of India

The management, faculty and student community wholeheartedly congratulate **Mr. R. Denis, Assistant Professor**, PG Department of Computer Science for his Patent and bringing laurels to the institution. Mr. R. Denis has published a Patent in the official Journal of Patent Office, Intellectual Property of India (Journal No. 34/2020 Dated: 21/08/2020) and the title of the invention is “Automatic Fault Failure Detection Mechanism of Electronic Circuit Board of Consumer Appliances Using Image Processing Algorithm”.

Christmas Celebration at Idhaya Nagar

Sacred Heart College with DB Centre & Extension Service had Christmas celebration at Idhaya Nagar, Tirupattur on 18th December, 2020. Rev. Dr. John Alexander, SDB, Rector and Secretary, Rev. Dr. Maria Antony Raj, SDB, Principal, Rev. Dr. Gandhi Kallarasam, SDB, Administrator, Rev. Fr. Adaikalaraj, SDB, Spiritual Counsellor and Bro. Casimir Joseph graced the occasion. The DB Centre staff collaborated with the people in Idhaya Nagar and arranged a meaningful Christmas celebration. The community offered bed sheets and lunch for about **50 Gypsy families** in Idhaya Nagar, Tirupattur.

Christmas Celebration at Sacred Heart College

Sacred Heart College (Autonomous), Tirupattur celebrated a meaningful Christmas amidst the pandemic on 22nd December, 2020, Tuesday at Kamarajar Arangam between 10.00 a.m. and 12:30 p.m. The members of the Salesian community, the teaching and non-teaching staff graced the occasion. The holy mass to invoke the blessings of God was led by Rev. Dr. John Alexander, SDB, Rector and Secretary. A thought provoking homily was

preached by Rev. Dr. S. John Borg SDB. Rev. Dr. I. Joe Sanjay OFM Cap, Head, Department of Counselling Psychology delivered the Christmas message “God with us”.

Silver Jubilee of Priestly Ordination of Rev. Dr. K.A. Maria Arokiaraj, SDB

On the 23rd of January, 2021, Rev. Dr. K.A. Maria Arokiaraj, SDB, celebrated his 25th Year of Priestly Ordination. The entire Salesian Educative Community gathered as a family to celebrate the day. The celebration started with the Holy Eucharist at 10.30 a.m. in the Kamarajar Arangam.

National Voter’s Day Celebration

The **National Voters’ Day** was celebrated on 25th January, 2021 at Sacred Heart College (Autonomous), Tirupattur. The celebration began at 10.30 a.m. with the august presence of **District Collector Mr. M.P. Sivan Arul, IAS, Dr. P. Vijay Kumar, IPS, Superintendent of Police, Rev. Dr. D. Maria Antony Raj, SDB, Principal**, Sacred Heart College and the esteemed members of the district administration. The dignitaries were greeted with welcome dance performed by government school students. The staff, students, self-help group members, NCC Cadets, Rover and Ranger volunteers of Sacred Heart College, the scouts and guides, students and headmasters from the neighbouring government schools participated in the voters’ day celebration. The participants formed a human chain “Vote Tirupattur” that was video graphed by a drone. All the participants took the oath with “Voters Pledge”. The aim of national voters’ day celebration was to encourage and facilitate more young voters to take active part in the political process to enrich democracy. The tricolour balloons were released by the District Collector, Sub-Collector, Superintendent of Police, Principal, Headmasters and Students as a flag of electoral awareness among the citizen. The participants gathered at Carreno Hall and the District Collector delivered a lecture on democracy and the importance of voting. Finally, new voter identity cards were distributed to the fresh voters.

Distribution of Kitchenware to Unaided Teaching Staff by IVDP

Ramon Magasaysay winner **Mr. Kulandai Francis**, Founder and President, IVDP, Krishnagiri as a token of felicitation and gratitude to Rev. Dr. K.A. Maria Arokiaraj, Additional Principal offered kitchenware to **133** unaided teaching staff members on 24th February, 2021.

Inauguration of Regular Classes (2020 - 2021) for 1st UG and PG Students

Regular classes for the first UG and PG students began on the 8th February 2021, in compliance with government orders. The first year UG and PG students were asked to gather in the Kamarajar Arangam, at 9.00 a.m.

Hosting Training Sessions for Tamil Nadu Assembly Elections

The College had allotted the premises and classrooms to the district administration of Tirupattur for conducting training sessions for assembly elections 2021. The classes were conducted for election officers on 14.03.2021, 27.03.2021, 01.04.2021 and 05.04.2021.

Other Significant Events

Upon the request of the district administration, the MSW block of the college was allocated for housing and treating Covid-19 patients.

These are the other notable events that took place in the premises during this academic year:

- ❖ **74th Independence Day** celebration was conducted at Sacred Heart College and **Rev. Dr. John Alexander, SDB**, the special invitee for the day, hoisted the National Flag and delivered an inspirational speech.
- ❖ Colourful celebration of Cultural Fest known as **HEARTBEAT - 2021** was conducted on 31st January, 2021.
- ❖ Republic Day celebration and parade were conducted on 26th January, 2021. **Rev. Dr. K. A. Maria Arokiaraj, SDB**, the Additional Principal delivered the Republic Day address.
- ❖ The Feast of our Father and Founder **St. John Bosco** was celebrated on 31st January, 2021 with all pomp and grandeur.

Staff Development Activities

The introduction of online classes during the pandemic is a game changer in the teaching learning process and I am happy and proud to state that our institution stood second to none in handling the crisis. The institution provided several training programmes to the faculty for handling online classes, conduct of online exams, online supervision etc.

Refresher Courses

Updation is a key factor in one's life and especially it is an integral element of a teacher's career. So I am very happy to mention that the following faculty members have undergone orientation and refresher courses organized by some reputed institutions across the country. I congratulate them on their efforts.

1. Dr. G. Mohan Gandhi, Asst. Professor, Department of Tamil
2. Dr. K. Sivakumar, Asst. Professor, Department of Economics
3. Mr. S. John Sundar, Asst. Professor, Department of Economics

4. Dr. M. Antony Arockiasamy, Asst. Professor, Department of Mathematics
5. Dr. M. Jose, Asst. Professor, Department of Physics
6. Dr. V. Collins Arun Prakash, Asst. Professor, Department of Chemistry
7. Dr. R. Jude Vimal Michael, Asst. Professor, Department of Chemistry
8. Rev. Fr. J. Andrews Raja, Head, Department of Social Work
9. Dr. K. Arockiaraj, Asst. Professor, Department of Social Work
10. Mr. A. Bento Devaraj, Physical Director

Training Programmes

The College is taking keen interest in equipping its faculty with adequate skills and training. The pandemic hit us hard, when the going got tough, the tough got going. Indeed our faculty promptly responded to the situation and enthusiastically underwent online training programmes, webinars, quizzes etc. Here's the list of such programmes.

- A three day training programme for staff of Don Bosco Higher Education Institutes (DBHEI) was organized from 26th May to 28th May 2020.
- We conducted a three day training programme on online teaching and learning from 3rd June 2020 to 5th June 2020 for the staff of constituent colleges of Thiruvalluvar University.
- A three day online training programme was conducted for the staff of AIACHE from 8th June 2020 to 10th June 2020.

Women Empowerment Programmes

Women empowerment is Nation's empowerment. Having realized the indispensable role of women, the College encouraged and supported the following women empowerment programmes that witnessed active participation of hundreds of our women students.

- The Women Cell of Sacred Heart College (Autonomous), Tirupattur organized a webinar on the topic "**Creativity in Women Entrepreneurship**" for the Final Year Arts Students on 28th January 2021. The resource person of the day was Dr. Auxilia Antony, Assistant Professor, Department of Commerce, Auxilium College, Vellore. She addressed the gathering and acknowledged the major role played by women in shaping society.
- Womens' day was celebrated on 8th March 2021 to emphasize the progressive roles to be played by women. A webinar on "**Women in Leadership**" was conducted to sensitize the women students about the participation of women in societal upliftment activities. The session was addressed by Dr. Yamini Kannappan, Pshychiatrist, Kauvery Hospital, Chennai.

- The Sacred Heart College Women Cell in collaboration with the department of Biochemistry organized an Inter – Collegiate Virtual Debate on ‘**Women Empowerment**’, on International Women’s Day, 8th March 2021 between 3.00 p.m. and 5.00 p.m. The best speaker awards were given to two speakers of the debate – one from each category.
 - S. Abinaya – Auxilium College , Vellore.
 - C. Anu - Sacred Heart College – Tirupattur.
- A Webinar on “**Women Psychology**” was organised by the Department of Social Work, M.Sc., Counselling Psychology and M.Sc., Computer Science on 12th March 2021. The Resource person was **Rev. Fr. Arul Xavier OFM**, the Director of the Fountain College, Sundampatti, Krishnagiri. Around 69 students participated in this webinar.
- International Women's Day celebration was conducted on 08-03-2021 on the theme "**Balance to Better**". The following were invited as Chief Guests: **Mrs. Rani**, Assistant Superintendent of Police, Tirupattur, **Dr. Sumathi**, Gynecologist, Government Hospital, Tirupattur, **Mrs. Christy Sujatha**, Technical Writer, Chennai, **Ms. Latha Munuswamy**, Student Counsellor, Sacred Heart College, Tirupattur and **Mr. M. Arul Doss**, Family Counsellor, DB Centre.
- The International Women’s Day was celebrated in the AICTE Women’s Cell on 08-03-2021. The programme was taken up to commemorate womanhood among the students of professional education in both MBA and MCA programmes.

Scholarships

IVDP Scholarships

The Institution has made efforts to tap resources from various organizations to help the needy students by offering scholarships and IVDP, Krishnagiri as in previous years has extended its scholarships to 121 deserving students to meet their educational expenses to the tune of **Rs. 9,07,500/-**. I thank Mr. Kulandai Francis for this generous gesture.

Other Scholarships

The Salesian educative system never allows the economic backwardness of the students to steal the chances of education. To meet this goal, several scholarships are being offered to the deserving students. They are:

- Government Scholarships **2717 students** benefited by an amount of **Rs.2,15,03,798/-**

Work Scholarship

Work scholarship for students is a flagship programme of Sacred Heart College which teaches the students about the dignity of labour and makes them earn while they learn. In the last year about **83 students** were inducted under this scheme and work scholarships to the tune of **Rs.3,09471/-** were disbursed for them.

Student Strength

Students do not just remain as numbers but they are the real assets of Sacred Heart College and I am delighted to present the details of the students strength.

U.G. Students' Strength (Shift - I & II)

Department	I Year		II Year		III Year		Total	
	M	F	M	F	M	F	M	F
B.A. Economics	67	10	65	8	58	11	190	29
Commerce	107	47	93	54	89	50	289	151
Mathematics	85	55	84	62	72	70	241	187
Physics	56	49	59	47	58	45	173	141
Chemistry	67	38	57	47	58	47	182	132
Computer Science	83	27	76	31	72	32	231	90
B.A. Tamil	38	32	36	40	33	32	107	104
BCA	39	16	43	10	40	10	122	36
B.A. English	71	69	66	69	58	65	195	203
B.Com (CA)	52	25	46	24	54	15	152	64
BBA	57	20	63	13	52	18	172	51
Biochemistry	23	27	30	25	23	28	76	80
Microbiology	26	29	32	22	25	25	83	76
History	43	4	40	7	0	0	83	11
Total	814	448	790	459	692	448	2296	1355

P.G. Students' Strength (Shift - I & II)

Departments	I Year		II Year		III Year		Total	
	M	F	M	F	M	F	M	F
M.A. Economics	7	3	9	4	-	-	16	7
MSW	25	19	20	20	-	-	45	39
M.Com.	7	4	4	5	-	-	11	9
M.Sc. Mathematics	23	54	9	49	-	-	32	103
M.Sc. Physics	11	18	13	16	-	-	24	34
M.Sc. Chemistry	11	18	10	18	-	-	21	36
M.Sc. Computer Science	14	5	10	16	-	-	24	21
M.Sc. Biochemistry	2	7	2	4	-	-	4	11
M.Sc. Counselling Psychology	10	10	6	13	-	-	16	23
M.A. Tamil	7	4	2	6	-	-	9	10
M.A. English	7	18	15	27	-	-	22	45
MCA	40	20	8	3	-	-	48	23
MCA Lateral Entry	0	0	0	0	26	33	26	33
MBA	37	23	32	25	-	-	69	48
PGDHRM	8	4	-	-	-	-	8	4
PGDIEM	9	12	-	-	-	-	9	12
PGDLM	19	11	-	-	-	-	19	11
PGDMLT	8	3	-	-	-	-	8	3
Total	245	233	140	206	26	33	411	472

M.Phil. Scholars

Department	M	F	Total
M. Phil Tamil	-	-	-
M. Phil English	1	-	1
M. Phil Economics	-	-	-
M. Phil Commerce	1	1	2
M. Phil Mathematics	-	-	-
M. Phil Physics	-	-	-
M. Phil Chemistry	1	1	2
M. Phil Computer Science	-	-	-
M. Phil Social Work	-	-	-
M. Phil Management	-	-	-
M. Phil Computer Applications	-	-	-
M. Phil Biochemistry	-	-	-
Total	3	2	5

Ph.D. Scholars

Department	M	F	Total
Ph.D. Tamil	-	4	4
Ph.D. English	1	2	3
Ph.D. Economics	1	-	1
Ph.D. Commerce	4	1	5
Ph.D. Mathematics	4	3	7
Ph.D. Physics	-	3	3
Ph.D. Chemistry	-	1	1
Ph.D. Computer Science	-	-	-

Ph.D. Biochemistry	-	1	1
Ph.D. Management	1	-	1
Ph.D. Social Work	-	-	-
Ph.D. Counselling Psychology	-	-	-
Total	11	15	26

Total Students - 4565

Male Students - UG: 2296 PG: 411 M.Phil. : 3 Ph.D.: 11

Female Students - UG: 1355 PG: 472 M.Phil. : 2 Ph.D.: 15

Teaching Staff Strength

Total Staff Members - 201

Aided Staff - 45

Management Staff - 156

Administrative Staff Strength

Total Administrative Staff - 76

Aided Administrative Staff - 16

Management Administrative Staff - 60

Results

The means should justify the ends said Mahatma Gandhi and here at Sacred Heart College we strive to justify our efforts through qualitative results of our students through just and fair examinations and evaluation.

April 2020 Semester Examination Results

S.No	UG Courses	Year	Sentup	Passed	%
1	B.Sc. Mathematics	I	146	146	100%
		II	145	145	100%
		III	143	143	100%

2	B.Sc. Physics	I	106	106	100%
		II	102	102	100%
		III	104	104	100%
3	B.Sc. Chemistry	I	108	108	100%
		II	103	103	100%
		III	98	98	100%
4	B.Sc. Computer Science	I	107	107	100%
		II	104	104	100%
		III	99	92	92.93%
5	B.Sc. Biochemistry	I	54	54	100%
		II	51	51	100%
		III	44	44	100%
6	B.C.A.	I	53	53	100%
		II	50	50	100%
		III	47	46	97.87
7	B.Sc. Microbiology	I	53	53	100%
		II	50	50	100%
		III	44	44	100%
8	B.A. History	I	44	44	100%
9	B.A. Economics	I	67	67	100%
		II	67	67	100%
		III	63	60	95.24
10	B.Com.	I	145	145	100%
		II	138	138	100%
		III	139	139	100%
11	B.B.A.	I	75	75	100%

		II	69	69	100%
		III	61	61	100%
12	B.A. Tamil	I	75	75	100%
		II	63	63	100%
		III	52	51	98.08%
13	B.A. English	I	132	132	100%
		II	119	119	100%
		III	127	106	83.46%
14	B.Com (CA)	I	71	71	100%
		II	68	68	100%
		III	67	67	100%

S.No	PG Courses	Year	Sentup	Passed	%
1	M.Sc. Mathematics	I	58	58	100%
		II	84	83	98.81%
2	M.Sc. Physics	I	29	29	100%
		II	29	26	89.66%
3	M.Sc. Chemistry	I	29	29	100%
		II	29	29	100%
4	M.Sc. Computer Science	I	26	26	100%
		II	26	25	96.15
5	M.Sc. Biochemistry	I	06	06	100%
		II	17	17	100%
6	PGDMLT	I	06	06	100%
7	M.C.A.	I	11	11	100%
		II	59	59	100%

		III	57	55	69.49
8	M.Sc. Counselling Psychology	I	19	19	100%
		II	16	16	100%
9	M.A. Economics	I	12	12	100%
		II	06	06	100%
10	M.Com.	I	09	09	100%
		II	19	19	100%
11	M.S.W	I	40	40	100%
		II	42	42	100%
12	MBA	I	58	58	100%
		II	59	55	93.22%
13	PGDHRM	I	35	35	100%
14	PGDLM	I	16	16	100%
15	PGDIEM	I	20	20	100%
16	M.A. Tamil	I	08	08	100%
		II	06	06	100%
17	M.A. English	I	41	41	100%
		II	44	44	100%

December 2020 Semester Examination Results

S.No	UG Courses	Year	Sentup	Passed	%
1	B.Sc. Mathematics	I	134	99	73.88%
		II	144	129	89.58%
		III	142	141	99.30%
2	B.Sc. Physics	I	103	79	76.70%
		II	105	101	96.19%

		III	101	100	99.01%
3	B.Sc. Chemistry	I	104	74	71.15%
		II	105	93	88.57%
		III	104	103	99.04%
4	B.Sc. Computer Science	I	108	75	69.44%
		II	102	88	86.27%
		III	103	90	87.38%
5	B.Sc. Biochemistry	I	49	49	100%
		II	54	54	100%
		III	51	51	100%
6	B.C.A.	I	55	32	58.18%
		II	51	47	92.16%
		III	50	40	80.00%
7	B.Sc. Microbiology	I	53	53	100%
		II	49	49	100%
		III	48	48	100%
8	B.A. History	I	39	18	46.15%
		II	38	16	42.11%
9	B.A. Economics	I	66	23	34.85%
		II	60	22	36.67%
		III	60	46	76.67%
10	B.Com.	I	147	97	65.99%
		II	134	120	89.55%
		III	134	125	93.28%
11	B.B.A.	I	77	60	77.92%
		II	70	49	70.00%

		III	66	52	78.79%
12	B.A. Tamil	I	64	29	45.31%
		II	64	27	42.19%
		III	61	60	98.36%
13	B.A. English	I	129	79	61.24%
		II	122	88	72.13%
		III	111	92	82.88%
14	B.Com (CA)	I	75	31	41.33%
		II	64	57	89.06%
		III	68	61	89.71

S.No	PG Courses	Year	Sentup	Passed	%
1	M.Sc. Mathematics	II	58	57	98.28%
2	M.Sc. Physics	II	29	29	100%
3	M.Sc. Chemistry	II	28	28	100%
4	M.Sc. Computer Science	II	26	25	69.15%
5	M.Sc. Biochemistry	II	05	05	100%
6	M.C.A	II	09	09	100%
		III	59	59	100%
7	M.Sc. Counselling Psychology	II	19	18	94.74%
8	M.A. Economics	II	12	12	100%
9	M.Com.	II	07	07	100%
10	M.S.W	II	37	36	97.30%
11	MBA	II	56	55	98.21%
12	M.A. Tamil	II	08	08	100%
13	M.A. English	II	42	42	100%

Library Services

Libraries are beacons of knowledge and wisdom. An enormous collection of both hard and soft repositories of books, journals and other literatures is a treasure to count upon in our College. Here are the notable initiatives and accomplishment of the department of Library during this academic year.

- ❖ 2625 new Books were added to the library collections.
- ❖ 22 UGC care listed Journals were subscribed.
- ❖ 20 Ph.D. Thesis and 25 M.Phil., dissertations were included to the Research Cell.
- ❖ MoUs were renewed with DELNET, NLIST- Inlibnet and British Council Library, Chennai.
- ❖ Enabled online access to Library OPAC (eBLIS) and Digital Library. Software (DSpace) were activated this year.
- ❖ A workshop on “Reading Habit” was organized on 12th August 2020 for School Students.
- ❖ 1,70,000 ebook links were generated from various open access database.
- ❖ Membership with Magzter – an Online Magazine and Newspaper.
- ❖ Database to access 5000 magazines and all the newspapers published in India.

Sports

Safety has to play ahead of sports! Yes the pandemic brought to a halt many of our sports activities which otherwise would have been conducted through our College.

As a face lift for the sports facilities, the following equipment were procured and added to the existing facilities

- Multistation Gym complete renovation
- New weight bench
- New preachercurl bench

National Level

S. Chandru (AU190160), II B.Com, represented Tamil Nadu Athletic Cross Country Race team in the 55th National Cross Country Championships 2021 held at Chandigarh on 21-02-2021.

National Cadet Corps (NCC)

The brave comrades of NCC wing of our College this year, made their unique and significant contribution to the district administration during the time of pandemic.

1. Covid-19 Duty: Our College NCC Officer with 52 NCC Cadets and 2 Army Staff had been doing Covid-19 duties in and around Tirupattur along with Police Department and District Administration, Tirupattur. They had done various social services such as;

- a. Controlling Traffic along with Police.
 - b. Crowd Control in Public places i.e., Bus stand, Market, Banks, etc.,
 - c. Advising people to wear mask.
 - d. Doing check post duty along with Police.
 - e. Doing Call Centre Job in Police Superintendent Office, Tirupattur.
 - f. More than 6 Police Check Posts near the Bus stand, C.K. Ashram, Collector Office, Hotel Raja Rani, Asiriyar Nagar and Eari Karai (Tank Bund) were managed by our college NCC Cadets. They worked shift wise with the maximum of 8 hours.
 - g. From 02nd May 2020 to 16th June 2020, around 45 Days, our college NCC Cadets and NCC Officer had participated in Covid-19 duty without expecting any reward from Government.
2. Felicitation Programme: There had been a felicitation programme on 15th July 2020 organized by District Administration and Police Department under the Headship of District Collector, Superintendent of Police and Commanding Officer from 12th the Battalion, Salem. For all Covid-19 Warriors Appreciation Certificates and Mementoes had been given.
 3. Blood Donation Camp: The NCC Unit of Sacred Heart College, Government Hospital, Tirupattur and Vizhuthugal Blood Donor Group, Tirupattur jointly organized a blood donation camp on 10th December 2020 in Oasis Hall. Dr. C. Kumaravel, MBBS, Blood Bank Officer, Government Hospital, Tirupattur and Rev. Dr. D. Maria Antony Raj, SDB, Principal, Sacred Heart College, Tirupattur were the chief guests. Around 50 NCC Cadets including Boys and Girls donated their blood. Lt. Dr. K. Sivakumar, NCC Officer and Dr. J. Merlin Florence, NCC Care – Taker had organized the entire programme. At the end of the programme appreciation certificate was given to every blood donor.
 4. The College in collaboration with Lions Club Tirupattur donated materials to the Covid affected areas in Tirupattur.
 5. In addition to these they carried out their usual activities such as celebration of Independence day, Republic day etc. with their parade.

Extension Services (The Sacred Heart College Society)

Introduction

The Sacred Heart College Society is a legally registered Non-Governmental Organization established in 1973 at Tirupattur District to promote environmentally sound, equitable and sustainable development strategies. Education, Sustainable Development, Women Empowerment and Rural Livelihood Development are the focal areas of the Sacred

Heart College Society. The Society implements programmes such as grass root level interventions in five blocks of the district namely Tirupattur, Kandhili, Jolarpettai, Natrampalli and Alangayam. It implements programmes through networking with Central and State Government agencies and maintains a cordial and collaborative relationship with all its stakeholders.

The Sacred Heart College Society has been commended as an agency for Women Empowerment and Rural Livelihood Development in this region. Over the years it has developed a commendable rapport with the local people, NGOs and Government officials for the successful implementation of its targeted programmes.

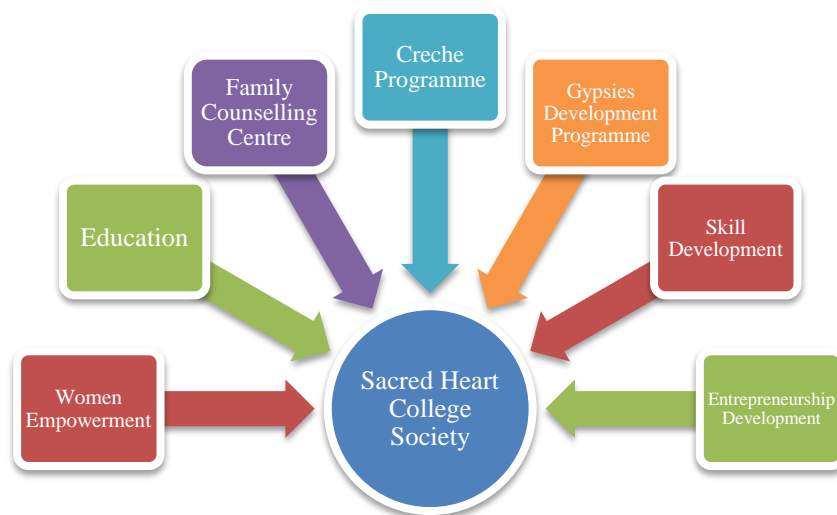
Extension Education and Services: Vision

The College wants to be recognized nationally and internationally as the College of choice in nurturing innovation and talent in science, technology and development that cater to rural development.

Extension Education and Services: Mission

The College wants to preserve, create and disseminate knowledge and conserve and develop scientific, technological and cultural heritage through quality and relevant teaching and research; it also endeavours to create a conducive working and learning environment; and work with government and private sector for the betterment of society.

Projects Overview



Women Empowerment

Self Help Groups

The women empowerment programme of the Sacred Heart College Society focuses on bringing women together for creating a common platform for mutual trust and support. The Self Help Groups programme is an extension of the Women’s Empowerment programme

under which, women save up small amount every month in SHGs (Self Help Groups). They take small loans from their SHGs which help overcome their dependency on traditional money lenders for petty credit needs. The SHGs also allow women to set up small businesses for earning some cash. Besides the financial autonomy, the SHGs extend a platform to these women to discuss social issues. They strengthen their solidarity, build their confidence and allow them space to unload and deliberate solutions. Presently we run this programme in partnership with NABFINS (NABARD Financial Services Private Limited and Indian Bank. Our SHGs have been engaged in enterprises like Coir Yarn Making, Coir Mat, Small Millets Value Additions, Masala Powder Making, Milk Value Additions, Vermi composting and Leaf Plate Making etc.

S.No.	Particulars	Total
1	Total No. of Groups	982 (1277)
2	Total No of New Groups Formed	124
3	No. of Women	14124
4	Loan Linked Groups	293
5	No of Differently abled SHGs	4
6	No. of Differently abled Members	44

Economic Assistance to SHGs

Self Help Group is a visible organized setup to disburse microcredit to the rural women and encourage them in entrepreneurial activities. SHGs and micro-credit are the solutions to speed up the socio-economic development of poor women.

The Sacred Heart College Society has been working as a catalyst in promoting and linking more and more SHGs to the banking system. We have been associated with NABARD Financial Services Pvt. Ltd. (NABFINS) and Indian Bank for credit linkage of the SHGs. This would be utilized for scaling up the SHG-linkage programme and supporting other microcredit initiatives. Special emphasis is provided for building the capacities of the poor with particular emphasis on vulnerable sections. The economic assistance provided by NABFINS, Indian Bank, TAHDCO and VCCB with regard to microcredit presented in Table reveals that **295 SHGs** as on 01.04.2020 credit were linked. The cumulative credit disbursed by them is **Rs. 12.48 crores** as on 31.03.2021.

SHG Loan Disbursement

S. No	NABFINS		INDIAN BANK		VCCB BANK		TOTAL		
	Month	Total Groups Graded	Total Amount Disbursed	Total Groups Graded	Total Amount Disbursed	Total Groups Graded	Total Amount Disbursed	Total Groups	Total Amount
1	April 2020	-	-	-	-	-	-	-	-
2	May 2020	-	-	75	62,05,000	-	-	75	62,05,000
3	June 2020	-	-	30	1,07,24,000	-	-	30	1,07,24,000
4	July 2020	-	-	09	37,85,000	-	-	09	37,85,000
5	August 2020	-	-	04	17,70,000	-	-	04	17,70,000
6	September 2020	-	-	06	23,50,000	-	-	06	23,50,000
7	October 2020	11	55,30,000	09	46,65,000	-	-	20	1,01,95,000
8	November 2020	19	1,34,75,000	03	13,50,000	-	-	22	1,48,25,000
9	December 2020	31	1,74,05,000	16	62,75,000	-	-	47	2,36,80,000
10	January 2021	15	71,15,000	12	80,08,000	-	-	27	1,51,23,000
11	February 2021	22	1,30,50,000	06	26,30,000	-	-	28	1,56,80,000
12	March 2021	17	1,47,25,000	10	58,15,000	-	-	27	2,05,40,000
Total		115	7,13,00,000		5,35,77,000			295	12,48,77,000

Total Groups - 295 Total Disbursement - Rs.12, 48, 77,000/-

Economic Assistance to SHGs: 2020 - 2021

NABFINS		INDIAN BANK	
Total Groups Graded	Total Amount Disbursed	Total Groups Graded	Total Amount Disbursed
115	7,13,00,000	180	5,35,77,000

Total groups graded - 292 Total amount disbursed = 12, 48, 77,000/-

TAHDCO Economic Assistance Loan

TAHDCO has implemented many development programmes/schemes for financial assistance to the economic development of Scheduled Caste from Special Central Assistance. The Self Help Groups are provided with economic assistance to start income generating activities in their own villages. Under Economic Assistance scheme the Self-help groups are eligible to get one time assistance for economic activity and 50% of the project cost or **Rs.2.50 lakhs** whichever is lower will be given as subsidy. The subsidy will be a Front End Subsidy for economic assistance. We have facilitated **40 SHGs** to avail EA loan of **Rs. 20,00,0000**.

TAHDCO –Economic Assistance Loan: 2020-2021

S.No	SHG Name	ACK Number	Bank Name	Amount
1	Roja	TAHDCO-2020-21-EA-VL-1	IB Microsate	500000
2	Mayil	TAHDCO-2020-21-EA-VL-3	IB Microsate	500000
3	Sri Om Ganapathi	TAHDCO-2020-21-EA-VL-4	IB Microsate	500000
4	SaiSakthi	TAHDCO-2020-21-EA-VL-5	IB Jolarpet	500000
5	Kurijpoo	TAHDCO-2020-21-EA-VL-6	IB Microsate	500000
6	Srilakshmi	TAHDCO-2020-21-EA-VL-7	IB Microsate	500000
7	Sembaruthi	TAHDCO-2020-21-EA-VL-8	Bank of Baroda	500000
8	Poomalai	TAHDCO-2020-21-EA-VL-11	IB Jolarpet	500000
9	MayilIlukuMakkal	TAHDCO-2020-21-EA-VL-12	IB Microsate	500000
10	Sri Vedyappan	TAHDCO-2020-21-EA-VL-13	IB Microsate	500000
11	Marikozhundhu	TAHDCO-2020-21-EA-VL-14	IB Microsate	500000
12	Ambethkarpallavali	TAHDCO-2020-21-EA-VL-15	IB Microsate	500000
13	Vidivelli	TAHDCO-2020-21-EA-VL-16	Bank of Baroda	500000
14	Anjel	TAHDCO-2020-21-EA-VL-18	IB Microsate	500000
15	Madha	TAHDCO-2020-21-EA-VL-19	IB Microsate	500000
16	Sri Muthumariyamman	TAHDCO-2020-21-EA-VL-20	IB Jolarpet	500000
17	Thamarai	TAHDCO-2020-21-EA-VL-22	Union Bank - Bommikuppam	500000
18	Deepajothi	TAHDCO-2020-21-EA-VL-23	IB Microsate	500000
19	DEEDS Sri Venkateswara	TAHDCO-2020-21-EA-VL-28	IB Microsate	500000

20	DEEDS Roja	TAHDCO-2020-21-EA-VL-29	IB Microsate	500000
21	DEEDS Jathimalli	TAHDCO-2020-21-EA-VL-30	IB Microsate	500000
22	DEEDS Sem	TAHDCO-2020-21-EA-VL-31	IB Microsate	500000
23	Annam	TAHDCO-2020-21-EA-VL-35	Bank of Baroda	500000
24	DEEDS Sembaruthi	TAHDCO-2020-21-EA-VL-38	IB Microsate	500000
25	Muthamil	TAHDCO-2020-21-EA-VL-40	IB Jolarpet	500000
26	DEEDS Thamarai	TAHDCO-2020-21-EA-VL-44	IB Jolarpet	500000
27	Aringer Anna	TAHDCO-2020-21-EA-VL-45	Union Bank Jaffarabad	500000
28	Mullai	TAHDCO-2020-21-EA-VL-51	Bank of Baroda	500000
29	Kathavathamman	TAHDCO-2020-21-EA-VL-63	IB Microsate	500000
30	Poonthamil	TAHDCO-2020-21-EA-VL-64	IB Microsate	500000
31	Sindu	TAHDCO-2020-21-EA-VL-67	IB Microsate	500000
32	Bhagavathsingh	TAHDCO-2020-21-EA-VL-69	IB Jolarpet	500000
33	DEEDS Amma	TAHDCO-2020-21-EA-VL-73	IB Microsate	500000
34	DEEDS Amman	TAHDCO-2020-21-EA-VL-74	IB Microsate	500000
35	DEEDS Poomagal	TAHDCO-2020-21-EA-VL-75	IB Microsate	500000
36	Annai Teresa Ezhaku Makkal Kulu	TAHDCO-2020-21-EA-VL-80	Union Bank - Bommikuppam	500000
37	DEEDS Amman or ICDP	TAHDCO-2020-21-EA-VL-81	IB Microsate	500000
38	A.P.J. Abdul Kalam	TAHDCO-2020-21-EA-VL-91	Bank of Baroda	500000
39	DEEDS Dr. Ambedkar	TAHDCO-2020-21-EA-VL-108	Bank of Baroda	500000
40	DEEDS Deepam MM	TAHDCO-2020-21-EA-VL-119	IB Microsate	500000
Total Amount of Loan				20000000

Education

Sacred Heart College Society works with a variety of project partners and community groups in many educational and development related endeavours. Our mission is not only to look at issues concerning access to education, but also to ensure that every child has access to an education that is meaningful. Sacred Heart College Society also imparts employability

skills through our Skill Training Centre, increasing their ability to secure a job and helping India to be a truly developed country.

Scholarships

Educational scholarship offers the youth a foundation to achieve their potential. However, millions of children drop out of schools due to financial reasons. With the objective of encouraging students to pursue further studies, we are giving various scholarships to the orphan, semi orphan college students and poor children belonging to SHG members' families. We also provide Work Scholarship for the poor students who are studying in Sacred Heart College, Tirupattur. Totally, **121 students** benefitted from IVDP Scholarship for their valuable education. The total amount for the students was **Rs. 9, 22,500/-**.

Distributed Orphan and Semi-Orphan Scholarships

S.No.	Particulars	Amount
1.	Semi orphan Scholarship (115 Students * Rs 7500)	8,62,500
2.	Orphan Scholarship (6 Students * Rs. 10,000)	60,000
Total Amount for Students		9,22,500

Total number of students' beneficiaries from IVDP Scholarships 2020-2021: 121

Evening Study Centres

After school, Tuition centres provide supplementary learning to compensate for deficiencies in education provided in the Government schools. These centres have been fairly effective in increasing the pass rates in the public examinations held in 10th and other grades, and in ensuring that children stay in school and not drop out. Children benefit from more individual attention and sensitivity to their community problems in these after school tuition centres. The Sacred Heart College Society runs **7** evening tuition centres in remote villages and slum settlements. There are **263 students** who have been benefitting from the evening tuition centres which have **more than 30 students in each village and slum settlements**. The students have been developing their subject knowledge by attending the evening classes.

S.No	Particulars	No. of Students
1	Sivarajpettai	32
2	Sagaya Nagar	35
3	Anandapatti	27

4	Idaya Nagar	56
5	Gowthampet	43
6	Abai Street	35
7	Bosco Nagar	35
Total		263

Total number of beneficiaries reached through evening tuition centres 2020-2021: 263

Family Counselling Centre (FCC)

Family Counselling Centre was established in 1991 by Bosco Institute of Social Work. It is functioning with the collaboration of Central Social Welfare Board (CSWB), New Delhi. It provides counselling, referral and rehabilitative services to men, women, and children who are affected by work related issues, family maladjustments, atrocities, social ostracism and also provide crisis intervention and trauma counselling in case of disasters. On an average, every year, the centre intervenes in **450 families** to have a better and fruitful family life. Recently, a team from TISS (Tata Institute of Social Sciences) came to centre as part of quality assessment on behalf of the CSWB. It appreciated the centre for its contribution to the society for more than 25 years. The inspection team ranked the family counselling centre as No.1 among all other centres in Tamil Nadu.

The centre has qualified and experienced trainers and counsellors. The centre focuses on the betterment of newly married couples, the aged, adolescences and special children. The centre has expertise in dealing with the areas of family maladjustments, extra-marital affairs, alcoholism, marital problems, psychological problems, work place related problems, personality differences, and rehabilitation. Based on its outcome based interventions, the Tamil Nadu State Government has declared the centre as State Service Provider and the counsellors have been declared as protection officers under the Domestic Violence Act, 2005.

A Few successful stories...

- Mr. B was referred by AWPS of Tirupattur. She seemed to have extra marital affair and was suspected by her spouse so they mistook each other and were not talking for a week. Then they approached AWPS which referred them to the counsellor who took initiative and spoke with her spouse. He alleged that, she was not cooperative and engaged in mobile calls with someone. The counsellor gave counselling to both of them individually and attempted their reunion. They had a session with the inspector which helped them to understand each other. At present they are living together happily.

- Mr. S was unemployed due to lock down and couldn't get any work; the counsellor arranged for a cook's job in a nearby NGO Udhavum Ullangal. She thanked the counsellor. At present she is on cloud nine and the NGO supports her children's education too.

Family Counselling Centre Cases (2020-2021)

	Particulars	No. of Cases
	Consolidated Report	
1	No. of new cases registered	267
2	No. of pending cases from previous year	32
3	No. of cases closed during the year 2020-2021	235
4	No. of referrals (Including cases where only guidance is given in one session and no. of participants of neighbourhood meeting)	51
	Quantitative Analysis	
5	Types of cases received	
i	Dowry Demands	8
ii	Domestic Violence	2
iii	Marital Maladjustment due to	27
a	b) Extra Marital Relations	34
b	c) Alcohol /Drug Addiction	41
c	d) Economic Crisis	34
d	e) Personality Difference	8
e	f) Any Other (Specify)	-
	Orphan	6
	Medical Assistance	12
	Physically Handicapped	7
	Depression	26
	Family Property Dispute	2

	Career Counselling	17
	Aged Home	7
	Love Affair	11
	Educational Guidance	15
	Torture	10
6	Assistance Rendered (New Cases)	
i	Counselling and Guidance	96
ii	Referred for	
	a) Legal Aid	7
	b) Police Assistance	89
	c) Short Stay	Nil
	d) Vocational Training	22
	e) Employment / Financial Aid	7
	f) Drug-de-addiction – Rehabilitation Centre	21
	g) Medical Aid	12
	h) Any Other: Residential School / MR / Orphanage	13
7	Outcome of Closed Cases	
	a) Reconciliation	67
	b) Separation	8
	c) Appeal in Court	7
	d) In de-addiction centre	21
	e) Wage Employment	9
	f) Self-Employment	7
8	Other Activities	
	Publicity / Awareness Campaign on Social Issues	7

Total number of cases reached out during 2020-21: 585

Child Development

Creche Programme

The Sacred Heart College Society has been running two crèche centres funded by Central Social Welfare Board, Ministry of Women and Child Development, Government of India, New Delhi under the scheme of Rajiv Gandhi National Creche Scheme from 1986. The crèche centres are located in Sivrajpet and Sagaya Nagar, Tirupattur Block of Vellore District. In each centre more than 40 underprivileged children, who were not able to get mother care and protection in the age of <5 age are admitted. So, totally 90 children benefited from this programme. Supplementary nutritious food is given to the children for 25 days in a month. Emergency medicines are also given to the children. Play materials and educational aid are provided to the crèche children. For safe cooking gas cylinder with cooking stove and vessels were provided to the both centres.

S.No	Name of the Place	No of Children
1	Sagaya Nagar	42
2	Sivarajpettai	48
Total		90

Total number of beneficiaries reached out through Creche during 2020-2021: 90

Activities under Unnat Bharat Abhiyan (UBA)

The Ministry of Human Resource Development (MHRD) has launched Unnat Bharat Abhiyan with an aim to connect institutions of higher education with local communities to address the development challenges through appropriate technologies. We have adopted five panchayats namely A.K.Mottur, Kasinayakanpatti, Kethandapatti, Mookanur and Periyagaram in consultation with the District Collector and use their data base to find solutions to the issues of basic amenities and livelihood opportunities faced by the rural communities and thereby help in bringing about a qualitative change in the economic change in the economic and living standards of the people.

We have completed baseline survey in the adopted villages with the support of MSW students and have prepared Gram Panchayat Development Plan (GPDP) to solve the village level problems. The UBA Cell was actively involved under the able guidance and support of our Principal **Rev. Dr. D. Maria Antony Raj, SDB** and UBA Cell Coordinator **Rev. Fr. S. Henry Daniel Ambrose, SDB** and assisted by **Mr. P. Nicola Prakash**, Project Officer.

We have submitted a proposal for additional funding under Perennial Assistance scheme and out of 473 proposals across the India 78 institutions have been selected under this scheme and we are one among them.

The Sacred Heart College (Autonomous) has been awarded **Rs.1, 75,000/-** under the **UNNAT BHARAT ABHIYAN (UBA) Perennial Assistance Scheme** by the Ministry of Human Resource Development (MHRD) and facilitated by IIT Delhi on the auspicious occasion of Independence Day celebrations on **15th August 2020** for implementing village development activities effectively in the adopted Villages. Through the UNNAT BHARAT ABHIYAN Programme we have reached out to 5 villages benefitting totally over 12,500 persons.

Deen Dayal Upadhyaya Grameen Kaushalya Yojana (DDU-GKY): Skill Training

DDU-GKY is uniquely focused on rural youth between the ages of 18 and 35 years from poor families. As a part of the Skill India campaign, it plays an instrumental role in supporting the social and economic programme of the government like Make In India, Digital India, Smart Cities and Start-Up India, Stand-Up India campaigns. The Sacred Heart College Society has received sanction to train **520** unemployed rural youth from Vellore, Tiruvannamalai, Krishnagiri and Dharmapuri Districts from Tamil Nadu State Rural Livelihood Mission (TNSRLM), Govt. of Tamil Nadu. So, far we have trained **70 students** and sent them for On Job Training (OJT). At present, we are giving the training to **105 students**.

Pongal Celebration

As a part of DDU-GKY, we held Pongal celebration on 12-01-2021 at DB Centre. The welcome speech was given by **Mr. Kamalanathan**, Trainer of Electrician Trade, who introduced the chief guests to the participants with their achievements and contributions to the society. The Rector spoke about farmers and their contributions to society's development. Followed by this the Principal conveyed his wishes to the staff members and the candidates of DDU-GKY Project.

Dr. K. Arockiaraj, Assistant Professor, Department of Social Work, gave a special speech through a motivational story on youth empowerment. He emphasized the need to obtain a good attitude and skill utilization on specific trade. Finally the chief judges distributed the prizes to the winners of the different competitions. The vote of thanks was given by Mrs. Jenifer Kalaivani, the non-domain trainer of DDU-GKY project. She thanked the chief guests, judges and who contributed and participated in the celebration. Students participated in various items like dance, singing, silambam, with great enthusiasm.

National Urban Livelihood Mission (NULM)

The Sacred Heart College Society has been conducting DAY-NULM training programme for urban youths to reduce poverty and vulnerability of the urban poor households by enabling them to access gainful self-employment and skilled wage employment opportunities, resulting in an appreciable improvement in their livelihoods on a

sustainable basis, through building strong grassroot level institutions for the poor. The mission would aim at providing shelters equipped with essential services to the urban homeless in a phased manner. In addition, the mission would also address the livelihood concerns of the urban street vendors by facilitating access to suitable spaces, institutional credit, social security and skills to the urban street vendors for accessing emerging market opportunities.

A total of **85 youth** have been trained through the NULM trainings.

Covid Relief Service

To Transgender and Gypsy Community

Covid-19 pandemic has adversely affected the transgender and gypsy community since there is no relief package announced for them. “Essential items have become costlier. Now, getting food is becoming difficult because there is no work or earning. Moreover, due to the lockdown, the new orders are put on hold and the transgender and gypsy community have lost their livelihoods. The Department of Extension Education and Services, Sacred Heart College and IVDP, Krishnagiri have provided immediate help to the vulnerable communities like them.

Mr. M.P. Sivan Arul, IAS, the District Collector presided over the programme and distributed food materials to the beneficiaries. **Mr. Megsasay Kulandai Francis**, Founder President, IVDP sponsored the food materials and graced the occasion. **Rev. Dr. John Alexander**, the Secretary, Sacred Heart College felicitated the gathering and thanked the Founder President, IVDP for sponsoring the event. He also mentioned about orphan and semi orphan scholarship, which is already being supported by IVDP for our students and every year more than 100 students are beneficiaries of it.

Rev. Dr. D. Maria Antony Raj, the Principal, Sacred Heart College spoke about services rendered during this pandemic situation and so far we reached out to **more than 1300 (Rs.500)** families through our college and Sacred Heart Alumni Association. Rev. Fr. S. Henry Daniel Ambrose, the Director, Extension Education and Services welcomed the gathering and honoured the guests. Mr. P. Nicola Prakash the Project Officer coordinated the event.

The General Public and Gypsy Community

The entire nation is under lockdown to fight against the fast spread of Covid-19. The poor people and the daily wage earners suffer the most and become the victims of starvation. The Sacred Heart College (Autonomous), Tirupattur has extended financial help and food materials to the Gypsy community at Idhaya Nagar through Institutional Social Responsibility (ISR) fund and Unnat Bharat Abiyan. The Rector **Rev. Dr. C. Antonyraj** and the Principal **Rev. Dr. D. Maria Antony Raj** have taken the initiative to help the neediest people during lockdown due to the spread of Covid-19 in India.

The initiative was coordinated and executed by the Director, Extension Education and Services **Rev. Fr. S. Henry Daniel Ambrose** with his team with the help of the **Mrs. Sagayamary**, staff in-charge, Gypsies Development Work who prepared the list and informed the people in advance to avoid crowding. They were called individually and given the rice bags, provisions and financial assistance which would help them for 15 days to run their lives. Bro. Anand facilitated the distribution of **12 kgs of rice bags** and financial assistance of **Rs. 7,500/- per family** on March 30, 2020 and it was given to **40 gypsy families** to the tune of **Rs. 3,00,000/-**. The Gypsy community was happy to receive our support and thanked the college management for supporting them during the crisis.

Distribution of Groceries for Gypsy Community and General People

Covid-19 brought about unprecedented changes in life across the world. In this crisis, the Department of Extension Education and Services continued to work with its rural communities and was able to reach out to **900 families** in Tirupattur. Here are the details.

S. No.	Particulars	Nos.
Relief Materials Distribution and Awareness		
1	Total no. of Villages Covered	87 Villages
2	Dry Ration Distribution	1005 Families
3	Kaba Soora Kudineer Distribution	2102 Individuals
4	Announcements and Awareness	33 Programmes
5	Hand Wash Demo and Implementation	41 Programmes
6	Sanitation and Disinfecting Work	2184 Houses
7	Social Distancing Awareness	25 Programmes
8	Mask Distribution	930 Masks
9	Medical Camps	11 Programmes
10	Food Distribution	1650 Individuals
11	Milk Distribution	672 Families
12	Home Quarantine Monitoring	129 Families
Counselling Service		
13	Tele-counselling	42 Cases

14	Medical Aid	13 Individuals
15	Economic Crises	27 Individuals
16	Psychological Problems	17 Cases
17	Physically Challenged	15 Individuals
18	Widow	17 Individuals
19	Widower	4 Individuals

Networking Partners

- Central Social Welfare Board, Ministry of Women and Child Development, Govt. of India, New Delhi.
- State Social Welfare Board, Govt. of Tamil Nadu.
- NABARD, Chennai.
- Entrepreneurship Development Institute of India (EDII), Ahmadabad.
- Department of Science and Technology.
- National Commission for Women.
- IIT, Delhi.
- IIT, Madras.
- NABFINS, Vellore.
- Tamil Nadu Corporation for Women Development, Govt. of Tamil Nadu.
- Indian Bank Zonal Office, Vellore.
- Vellore District Central Cooperative Bank, Vellore.
- Don Bosco Foundation, Chennai.
- SURABI, Chennai.
- Vazhikatti, Chennai.
- Manitha Neya Maiyam, Tirupattur.
- Integrated Village Development Project (IVDP).
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Concluding Remarks

“It is not enough to love the young, they must know that they are loved” said our Father and Founder Don Bosco. We, at Sacred Heart have a firm belief that we have lived up to the expectation of St. John Bosco during this time of crisis and confusion. We have the satisfaction that we catered to the needs of the young deserving souls that knocked at the gates of this temple of learning. All these accomplishments were possible only because of our Lord’s help and the blessing and protection of our Blessed Mother. Also, we the family members of Sacred Heart College can proudly pat each other that we have supported and cared for each other and made this academic year a memorable one. I take this opportunity to thank each and every one of you for your meaningful contribution to the growth of this great institution.

May God bless Sacred Hearts!

Thank you.

Ph.D. Abstracts

Identity Crisis in Bharati Mukherjee's *Jasmine*, Arundhati Roy's *The God of Small Things*, Jhumpa Lahiri's *The Namesake* and Kiran Desai's *The Inheritance of Loss*

The study aims at exploring the identity crisis in the Indian women writers in English and the sufferings of the women immigrants while settling down in a foreign country, in a new milieu, their problems, anxieties, and miserable plights in the light of present socio-political setup. One of the important themes of modern literature is the portrayal of the identity crisis, leading to psychological problems, a subject which has assumed a great significance in the present world of globalization. The Indian novelists in English have their roots in two traditions- the Indian and the Western. A large number of Indians were significantly moved by the candid desire to present before the western readers a reliable picture of India through their writings. The researcher has chosen four eminent authors, and novels to explore the issue of an identity crisis. Bharati Mukherjee, Arundhati Roy, Jhumpa Lahiri and Kiran Desai's writing is undoubtedly one of the best examples of this kind. The authors aim to observe, examine and present the existing position of women and the problems they face both in India and abroad. In the modern world with the increase of immigrants, hybrid nations and the constitution of countries with different cultural diversities, the question of identity came to the surface. The research will discuss the issue of identity in the postcolonial world and how they viewed and presented their ideas about constructing identity in former colonized countries and immigrants from these countries who suffered from facing the diasporas and the dilemma of the difficulty to construct their identity. Through the main characters, Jasmine, Ammu, Ashima, Gogol, Sai and Biju, an attempt is made to give a picture of women and immigrant who suffer from man-made cultural and traditional prescriptions as well as sanctions which do not allow them to live a life free from such constraints. The social issues that the protagonist raise are of multicultural significance. The picture that emerges from the study of the novel is not only that of a female being victimized by male but also that of female coming out as strong character to combat the challenges that come on her way. Through these novels, an endeavour is made to encompass the social and cultural issues through the mouth of a very dominant female character who is successful in bringing about a cultural and social change by presenting her condition in a cinematographic manner.

Keywords: identity, Multiculturalism, globalization, social issues, immigrant, the plight.

Dr. S. Alphonsa Mary

Assistant Professor

Dept. of English (Shift-I)

Organizational Justice: From Niti to Nyaya

(An Empirical Study Based on Bank Employees in Vellore District - Tamil Nadu)

Human Resource is considered as the most powerful resource of every country. All other resources like monetary resources, natural resources etc. depend on human resources. Every employee wants justice in his/her working environment, because organizational justice is a key factor, which is directly associated with the success of every organization. The term organizational justice refers to the extent to which employees perceive workplace procedures, interactions and outcomes to be fair in nature. These perceptions can influence attitudes and behaviour of an employee for good or ill, in turn having a positive or negative impact on their performance and the organization's success.

In order to keep employees satisfied, committed and loyal to an organization, the organization needs to be fair in its system regarding procedural justice, distributive justice and interactional justice. When employees feel that they are treated fairly by the organization in every aspect, they are liable to show more positive attitude and behaviour towards their job, which will lead them to experience job satisfaction. Justice is one of the most important moral and political concepts. Aristotle says "Justice consists in what is lawful and fair, with fairness involving equitable distributions and the correction of what is inequitable".

Organizational justice first put forwarded by Greenberg in 1987, refers to an employee's perception of their organization's behaviour, decisions and actions and how these influence the employee's own attitudes and behaviour at work. Niti and Nyaya, both stand for justice in classical Sanskrit. The term "Niti" refers to the organizational propriety and behaviour correctness. The term Nyaya stands for a comprehensive concept of a realized justice. Each and every human being expects to be treated with justice; unfortunately, that does not happen in our normal personal life as well as work life. However, every organization has its own justice practices / policies, but outcome or reaction of the employees indicates that there is some laxness in justice.

The justice river has not mingled into ocean and that is the ultimate problem here; its flow may strike somewhere. In other words, the essences of justice have not reached the downtrodden people because most of the time they exist only in the form of statements and not implemented properly. These statements may be applicable to almost all fields especially to organizations. The starting point of justice is good but landing or ending point is a big question mark in the present situation in most of the organizations. Hence, the researcher has taken the starting point of justice which is termed as Niti and the ending point of justice which is termed as Nyaya (Niti and Nyaya are also parts of the justice) and analyzed the linkage of these two with the help of Justice elements like procedural, distributive and interactional justices in banking sector. The mode of research design of the study was descriptive and analytical in nature. The sample unit of the present study was bank employees of both public and private bank branches in Vellore district. The total sample size was 517.

The applied sampling technique of the present study is Non probability 'purposive sampling' method. Researcher's self-made questionnaire was the tool for data collection and

distribution of questions was based on components of organizational justice (procedural, distributive and interactional). At the end, the research study reveals the following conclusions; the comparison between Niti and Nyaya in the aspect of distributive justice, the result indicates that the implementations of distributive justice in banks are comparatively poor as per employees' expectations. So, the concerned authorities should take necessary steps to match Niti and Nyaya with regard to distributive justice.

It draws a conclusion based on the perception and the personal experience of the employees related to the procedural justice, the results show that, the implementation of the established procedural justice both in private and public banks through comparison with Niti and Nyaya aspect is good and effective. Interpersonal relationship and understanding are the crucial parts of any organization and implementation has to be higher, to have a better work environment. Ultimately, interpersonal justice is not encouraged in both the banking sectors. The overall result shows that the implementations of the policies are not high compared to employees' expectations. It could be stated that the perception on justice significantly differs according to the gender of the employees working both in the private and public banks.

Dr. P. Saravanan

Head Department of Commerce (CA)

Biosynthesis of Metal Oxide Nanoparticles and Its Characterization

The metal oxide nanoparticles are being synthesized by various methods and found to have promising applications in upcoming days. One of the most important nanoparticles of metal oxide is zinc oxide nanoparticles (ZnO NPs). The special by improved characteristics and different applications of zinc oxide nanoparticles, are made to play a major role among metal oxide nanoparticles. Initially, the preliminary phytochemical screening of aqueous extract of *Luffa acutangula* peel was studied and found the presence of Flavanoids, Carbohydrates, Aminoacids, Proteins, Phenols, Quinones, Terpenoids, Coumarins, Saponins, Tannins, and Leucoanthocyanidines. The phytocomponents in the *Luffa acutangula* peel aqueous extract was analysed using GC – MS (Gas Chromatography – Mass Spectrometry) analysis. The GC-MS results showed the presence of six bioactive compounds in the aqueous extract of *Luffa acutangula* peel. Zinc oxide nanoparticles were successfully synthesized by a cost effective, less time consuming and safer method using *Luffa acutangula* peel extract. The synthesized ZnO nanoparticles were subjected to various characterization studies. Zinc oxide nanoparticles showed maximum absorption peak at 377 nm in UV visible absorption spectroscopic studies. The FTIR studies revealed the various groups present along with the zinc oxide nanoparticles attributed by aqueous peel extract. The shape of the zinc oxide nanoparticles was found to be spherical under scanning electron microscopy and they were found to be agglomerated. The average particle diameter measured by DLS was 3.6 nm and polydispersity index was found to be 0.56. The size of the zinc oxide nanoparticles as

analysed by transmission electron microscopy was found to be less than 18 nm. The energy dispersive spectroscopy showed that zinc was found to be present as zinc oxide and the quantity of ZnO was 79.91%. The TG-DSC studies of ZnO nanoparticles showed that they were exothermic in nature when they were heated to high temperatures. The weight loss of ZnO nanoparticles observed on heating is due to loss of capping agents derived from peel extract. The XRD sharp peaks obtained also revealed that the zinc oxide nanoparticles were of crystalline in nature. The synthesized ZnO nanoparticles were studied for their biological activity. ZnO nanoparticles were analyzed for their free radical scavenging activity by DPPH assay, hydrogen peroxide assay and nitric oxide assay and they showed far better activity than *Luffa acutangula* peel extract. The total antioxidant capacity of prepared ZnO nanoparticles was found to be 53.20 % as that of standard ascorbic acid at 1mg / ml concentration. The zinc oxide nanoparticles prepared showed antibacterial activity against pathogens - *Salmonella typhi*, *Neisseria gonorrhoea*, *Streptococcus pyogenes* and *Corynebacterium diphtheria*. The zinc oxide nanoparticles showed anti-inflammatory activity when studied by Human RBC membrane stabilization method. Also it effectively inhibited the egg albumin and bovine serum albumin denaturation by which it is confirmed to have anti-arthritis activity. The human liver cancer cell lines Huh7 was treated with prepared zinc oxide nanoparticles and the LC₅₀ was found to be 40 µg. The morphological changes of apoptosis were well established by AO/EB staining, Rhodamine staining, DCFH-DA staining and Hoechst staining. The study concludes that zinc oxide nanoparticles prepared using *Luffa acutangula* peel extract had the biological activity and is recommended as one of the best candidates for pharmacological applications.

Dr. R. Ananthalakshmi

UG Head, Department of Biochemistry

Green Synthesis and Characterization of Silver Nanoparticles Using Aqueous Extract of *Tamarindus Indica* Fruit Shell and Its Applications

The present investigation reveals the green synthesis of silver nanoparticles and capability of the fruit shell of pharmacologically important tree *Tamarindus indica*. An ecofriendly, easy, one step, non-toxic and inexpensive approach is used for the synthesis of silver nanoparticles. The Silver Nanoparticles were characterized and Surface plasmon resonance of the Nanoparticles was observed at 450 nm in UV-Visible Spectroscopy. FTIR result confirmed that the aqueous fruit shell extract was acting as the reducing, as well as the capping agent of the Silver Nanoparticles. SEM indicated that the synthesized Nanoparticles are spherical in shape. TEM and SAED showed that 20 to 30 nm sized silver nanoparticles were seen with crystalline structure. XRD spectrum showed eight face centered cubics of silver nanoparticles and thereby reveals the crystalline nature. Presence of Silver in the Silver Nanoparticles is 36.87% by weight, as confirmed by Energy-Dispersive Spectroscopy (EDS). DLS result confirms that 50 % of nanoparticles size is about 95.60 nm. Green synthesized and characterized silver nanoparticles were assessed for its efficacy of activity of antibacterial,

antioxidant, anticancer and catalytic degradation of dyes. Antioxidant assay was determined at different concentrations ranging from 10 µg to 50 µg / ml by DPPH and hydrogen peroxide scavenging assay. IC₅₀ concentration of silver nanoparticles was noted for DPPH and H₂O₂ scavenging as 9.12 µg / ml and 15.95 µg / ml. Total antioxidant capacity was examined by phospho molybdenum assay and was found to be 2.68 % at a concentration of 10 µg / ml. Antibacterial activity was performed by agar well diffusion assay against gram positive bacteria (*S.aureus* and *B.subtilis*) and gram negative bacteria (*E.coli* and *K.pneumoniae*). Highest zone of inhibition was noted against *S.aureus* which is a multidrug resistant bacterium. Silver nanoparticles could act as excellent antimicrobial agent while combined with commercial antibiotic such as Gentamycin. Anticancer activity was analyzed against breast cancer cell line by MTT assay. The result observed the inhibitory concentration (IC₅₀) at 20 µg / ml against MCF-7 cell line. Inflamed cells, irregular margins and stressed cells were shown in the silver nanoparticles treated cells. Catalytic activity of green synthesized silver nanoparticles was performed by degradation of methylene blue and safranin O. The percentage of methylene blue and safranin dye degradation efficiency of synthesized silver nanoparticles using aqueous extract of fruit shell of *Tamarindus indica* was calculated as 79.92 % and 75.93 % respectively at 48 hrs exposure time.

In conclusion, the results of this study demonstrated that Silver Nanoparticles from *Tamarindus indica* fruit shell extract may be a good anti-oxidant, excellent anti-bacterial agent against pathogens and also be a potential therapeutic agent for human breast cancer treatment.

Dr. A. C. Gomathi

PG Head, Department of Biochemistry

Customer Perception and Satisfaction on the Services of Automated Teller Machines and Debit Card Payments

In the era of digitalization, Debit card and Automated Teller Machines (ATM) have changed the mode of banking from branch to digital banking and digital payments. Debit card is dominating the entire banking card segment of India and serves as predominant tool to achieve the dream of cashless economy. The face of debit card is slowly changing from cash withdrawal at the ATMs to card payments at the point of sale terminals, yet, the debit card holders are affected by various issues like restrictions on transaction, high transaction fee, out of service and out of cash ATMs. Similarly service charges, lack of awareness, skimming and cloning, etc. are affecting the progress of card payments. Customer satisfaction and perception are the vital aspects that determine the transactions at ATMs, card payments and the future of India's digital payments.

In this scenario, the present study aims at examining the level of perception and satisfaction of debit card holders towards the services of ATMs and debit card payments as they could determine the utilization of debit cards and the future of banking sector. The research has

been conducted with the primary data collected from 864 debit card holders in undivided Vellore District, Tamil Nadu, India, through structured questionnaire. The collected data have been analysed with the help of Chi-Square Test, Factor Analysis, Correlation, Analysis of Variance, Independent Sample test and Regression Analysis.

The results of the study manifested that majority of the demographic variables have significant influence on the level of perception and satisfaction of customers on ATMs and debit card payments. Adaptability is an important predictor in the determination of the level of perception of customers on ATMs whereas reliability and restrictions are the base of level of satisfaction with ATMs. The perception of customers on card payments is mainly influenced by their awareness. Further, safety is the most important dimension which determines the satisfaction with card payments. It is suggested that banks can create positive perceptions and satisfaction on the services of ATMs and debit card payments by creating awareness, ensuring availability of ATMs and point of sale terminals, offering reliable services with safety, minimizing the transaction fee and enhancing the quality of customer care services. The results of this study could be useful for banks and various stakeholders in developing effective marketing strategies to attract new customers, retain their existing customers and to convert them as loyal customers. Thereby, the object of promoting digital banking and cashless economy could be achieved in future.

Dr. B. Seenivasan

Assistant Professor

Dept. of Commerce (Shift-II)

Academic Association Activities (Shift-I)

வீரமாமுனிவர் தமிழ் மன்றம்

தமிழ்த்துறை

21 ஜனவரி 2021 அன்று திருப்பத்தூர் மாவட்டக் காவல் துறையும், தூய நெஞ்சக் கல்லூரித் தமிழ்த்துறை வீரமாமுனிவர் தமிழ்மன்றமும் செஞ்சிலுவைச் சங்கமும் இணைந்து சாலைப் பாதுகாப்பு வராவிழாவைச் சிறப்பாகக் கொண்டாடின. இந்நிகழ்வில் திருப்பத்தூர் நகர காவல் ஆய்வாளர் திருமதி. பேபி அவர்களும் கல்லூரி முதல்வர் அருட்திரு முனைவர் தா. மரிய ஆண்டனி ராஜ் அவர்களும் தலைமைவகித்தனர். கல்லூரிக்கு முன்பாக சாலையில் முகக்கவசம் மற்றும் சீட்பெல்ட் அணிந்து வாகனம் ஓட்டியவர்களைப் பாராட்டும் விதமாகப் பரிசுகள் வழங்கப்பட்டன. வாகனங்களில் உள்ள முகப்பு விளக்குகளில் கருப்புநிற ஸ்டிக்கர்கள் ஒட்டப்பட்டன. இந்நிகழ்வில் ஏராளமான பொதுமக்களும், கல்லூரி மாணாக்கர்களும் கலந்துகொண்டனர். இதற்கான ஏற்பாடுகளைத் தமிழ் மன்றத் தலைவர் முனைவர் ஆ.பிரபு செய்திருந்தார்.

15 மார்ச் 2021 அன்று தமிழ் மன்ற உறுப்பினர்களுக்கான கவிதைப்போட்டி, கட்டுரைப்போட்டிகள் நடைபெற்றன. இப்போட்டியில் வெற்றி பெற்றவர்களுக்குச் சான்றிதழ்களும் பரிசுகளும் கல்லூரி முதல்வர் அருட்திரு முனைவர் தா. மரிய ஆண்டனி ராஜ் அவர்களின் திருக்கரங்களால் வழங்கப்பட்டன.

Department of English (Language)

The Department of English, Shift-I organized a webinar on 11-01-2021 on the topic English for Career Advancement. The Webinar commenced at 4.00 p.m. and was over at 5.00 p.m. Dr. S. Veeramani, Assistant Professor of English, Government Arts College, Kulithalai, Karur District, was the resource person. All the first year and second year students of Shift I were invited for the webinar. The resource person urged the students to develop their language competence to be more competitive in the job market. He insisted the students to develop their pronunciation and mentioned a few techniques that would help to improve their language skills. He asked them to note down words in a diary and refer to them and use them regularly while speaking. He also spoke about the various job opportunities available to those who are equipped with the language. He demonstrated the use of language in the field of Forensic Linguistics. Certificates were given to all the participants.

On 03-02-2021, a webinar was organized on the topic Developing Writing Skills and Avoiding Common Errors in English. Dr. M.A. Sahul Hameed, Associate Professor of English, VIT University, Vellore, was the resource person. The webinar began at 2.00 p.m. through Google Meet. Students from General English classes and B.A. English, Shift-I were

invited to the webinar. The Resource person was very precise in his talk augmenting the need for developing writing skills. He discussed the various ways in which they can develop their writing skills. He insisted on learning five new words every day and noting down the words in a diary. Further, he added that, without reading it is not possible to develop their writing skills. Therefore he suggested a few authors, mostly Indian writers for developing their reading habit. He also pointed out, how punctuations and spelling mistakes can alter the meaning of the usage of a word and how a word can be used in different contexts. The webinar was over at 3.15 p.m.

On 03-03-2021, at 2.30 p.m. in Mother Teresa Hall, a speech competition was organized by the department. Three topics were given to the students. The topics were: 1. Technology is a boon or bane, 2. Man Vs Humanity in the pandemic, 3. Can Actors Become Leaders? Fifteen students competed and exhibited their eloquence. Dr. Joy Christina, Assistant Professor of English, (Shift I) and Mr. V. Madhan Kumar, Assistant Professor of English (Shift-I) were the judges. Uma Priya from 1st B.Com won the first place; Magdalene Monica from 1st Physics won the Second Place, Manickavel from 3rd B.Com won the third place. Prizes and certificates were given to the winners.

On 17-03-2021, the Department organized an Essay and Poetry competition. Topics were given on the spot. The best essays and poems were given prizes and certificates.

Department of English (Literature)

The Department of English has organized a one-day online invited talk on 7th December 2020. Rev. Fr. Arul Xavier Raj gave a wonderful talk on “Boy Girl Relationship”. Around 100 students participated in the online invited talk.

Mr. Arul Prabakaran, Assistant Professor, Department of Counselling Psychology gave a wonderful speech on “Self-Motivation through Online Learning”. He clearly explained to the students on how to motivate themselves while learning through online. Around 100 students participated in the online invited talk.

The Department of English organized a one day seminar titled “The Modern Bildungsroman” on 20th February 2021. The programme started with prayer song and followed by felicitation for the chief guest of the day Ms. Reshma Ann Peter. The chief guest gave clear thoughts and ideas related to the topic. Around 180 students have participated in the programme. It took place in Carreno Hall.

Department of Economics (UG & PG)

Impact of Covid-19 on Indian Economy

The Post Graduate and Research Department of Economics, Sacred Heart College (Autonomous), Tirupattur organized a National Webinar on “Impact of Covid-19 on Indian

Economy” for students, Research scholars and Faculty members of social science stream on 18th May 2020. About 390 participants from various institutions all over India participated in the webinar. The webinar was hosted in the Zoom platform and YouTube live stream. The resource person was Dr. Elumalai Kannan, Associate Professor, Centre for the Study of Regional Development, Jawaharlal Nehru University (JNU), New Delhi. Rev. Dr. D. Maria Antony Raj, SDB, Principal, Sacred Heart College (Autonomous), Tirupattur welcomed the gathering and Dr. A. Xavier Susairaj, Associate Professor and Head, Department of Economics, Sacred Heart College (Autonomous), Tirupattur introduced the resource person. The resource person highlighted the impact of Covid-19 on Indian Economy with secondary data. Finally, Mr. A. Premkumar, Research Scholar, Department of Economics proposed the vote of thanks.

World Environment Day – 2020: Time for Nature – Celebrate Biodiversity on 05th June 2020

Dr. A. Royal Edward Williams, Assistant Professor, Department of Economics, SHC organized a webinar to celebrate the World Environment Day on “World Environment Day – 2020: Time for Nature – Celebrate Biodiversity” on 5th June 2020., The resource person of the day was Prof. M. Ravichandran, Director, BECH, Bharathidasan University, Tiruchirappalli. He highlighted on the importance of world environment day and the milestone of the day. About 240 participants took part in the webinar.

Economic Reflections on Daily Life on ICT and Lockdown Health Impacts on 11th June 2020

The first session was Learning Economic from Daily Life and ICT: Some Pedagogic Reflections. The resource person was Dr. M.V. Srinivasan, Professor of Economics, National Council of Educational Research and Training (NCERT), New Delhi. Dr. A. Xavier Susairaj, Associate Professor and Head, Department of Economics, Sacred Heart College (Autonomous), Tirupattur welcomed and introduced the chief guest. Dr. Srinivasan stressed on the importance of Information and Communication Technology in teaching and learning economics. The second session was “The Great Lockdown and Impact on Health”. Mr. A. Premkumar introduced the resource person Dr. P. Sigamani, Professor and Head, Department of Social Work, Central University of Tamil Nadu (CUTN), Thiruvarur, Tamil Nadu. He dealt with the various health issues in this lockdown period. Finally, Mr. Premkumar proposed a vote of thanks.

Data Management in Social Science Research on 20th July, 2020

The Post Graduate and Research Department of Economics organized the 3rd webinar on “Data Management in Social Science Research” on 20th July, 2020. Dr. A. Xavier Susairaj, PG Head, Department of Economics, Sacred Heart College (Autonomous), Tirupattur welcomed and introduced the resource person Dr. S. Pushparaj, Associate Professor and Head, Department of Econometrics, Madurai Kamarajar University, Tamil Nadu. He spoke on data management and its usage in social science research and also some hands on training on data matrix. Finally, Mr. A. Premkumar proposed a vote of thanks.

Two Day National Level Webinar Series

The Post Graduate and Research Department of Economics, Sacred Heart College organized a two-day Webinar series on “Research Methodology for Social Sciences: Emerging Trends and Counter Measures” on 3rd & 4th August 2020 for the postgraduate and research scholars of the social science stream. The participants were PG students M. Phil, and Ph.D. Research Scholars of various Research Institutions, Universities, and Colleges.

Day – 1: The Workshop was hosted in the Zoom platform with YouTube live streaming. The Webinar - 1 was organized on Monday 3rd August 2020, 10:00 am about "Research Integrity and Publication Ethics" and the resource person was Dr. J. V. ARUN, Assistant Professor, Department of Economics, Government Arts College for Men (Autonomous), Nandanam, Chennai, Tamil Nadu. Dr. A. Xavier Susairaj Head (PG) and Associate Professor, Department of Economics, Sacred Heart College (Autonomous), Tirupattur, welcomed the gathering and Mr. S. John Sundar, Asst. Professor of Economics introduced the resource person. Dr. J. V. ARUN during the first day session highlighted about research ethics, integrity, publication and plagiarism. Mr. S. John Sundar, organizing secretary proposed a vote of thanks with that the first day session was concluded.

Day – 2: The Webinar - 2 was organized on Tuesday 4th August 2020, at 10:00 am about "Writing Research Proposal and Funding Agencies for Social Sciences" and the resource person was Dr. P. Periyasamy, Assistant Professor, Department of Economics, Kristu Jayanti College (Autonomous), Bangalore, Karnataka. The Webinar started with a small prayer, Dr. J. Jacob Stanley Inbaraj, UG Head, Department of Economics, Sacred Heart College (Autonomous), Tirupattur, welcomed the gathering and Mr. S. John Sundar introduced the resource person. Dr. P. Periyasamy during the second-day session spoke on the research proposal writing format and different funding agencies. In the end Mr. S. John Sundar the organizing secretary proposed the vote of thanks with that the webinar was concluded.

The Post Graduate Department of Economics organized a special lecture on "Educational Quality and Learning Skills for Economic Students" on 11th January 2021 at 10:00 a.m. Dr. T. Aasif Ahamed, Assistant Professor, Department of Economics, Mazharul Uloom College, Ambur delivered the lecture. The participants were UG and PG Students of Economics. Dr. A. Xavier Susairaj, PG Head, welcomed the gathering, Dr. J. Jacob Stanley Inbaraj, proposed the vote of thanks.

Workshop cum Focus Group Discussion on Household Carbon Footprint

Institute for Social and Economic Change (ISEC), Bangalore and Department of Economics, Sacred Heart College (Autonomous), Tirupattur jointly organized a Workshop cum Focus Group Discussion on “Household Carbon Footprint” on 19th January 2021. The motive behind the programme was to comprehend people’s perception and the motivators that will trigger them to follow eco-friendly path. The programme was organized in four groups.

Sunil Nautiyal, Professor and Head, CEENR, ISEC convened this workshop and Dr. A. Xavier Susairaj, Associate Professor and Head, Department of Economics, Sacred Heart College was the organizer. Prof. Nautiyal had delivered the keynote address on Household Carbon Footprint and its various dimensions. He had emphasized the youth to help the country to reduce HCF while putting little efforts in making conservative use of the resources in day-today life. The programme was coordinated by Dr. J. Jacob Stanley Inbaraj, Assistant Professor of Economics and the vote of thanks was proposed by Mr. Premkumar, Ph.D. Scholar.

The PG Department of Economics organized a special lecture on "What do Economists do? Why do they do so?" was held on 08-02-2021 at 10:00 a.m. Dr. M. V. Srinivasan, Professor of Economics, National Council of Educational Research and Training (NCERT), New Delhi delivered the lecture. The participants were UG and PG Students of Economics. Dr. A. Xavier Susairaj, PG Head, welcomed the gathering, Dr. J. Jacob Stanley Inbaraj, proposed the vote of thanks.

Union Budget Discussion 2021-2022

Indian Institute of Public Administration (IIPA) local branch Tirupattur and the PG and Research Department of Economics Sacred Heart College (Autonomous), Tirupattur jointly organized a panel discussion on union budget 2021-2022 on 22-2-2021 at 11.30 a.m. in Carreno Hall.

Mr. Agri C. Veerabadran, Chairman I.I.P.A. L.B Tirupattur welcomed the gathering. Rev Dr. D. Maria Antony Raj SDB. Principal Sacred Heart College. Tirupattur delivered the inaugural address. In his address he mentioned the importance of the budget and asked the students of the economics and commerce to know about the budget. Rtn. K.M Subramanian, Secretary, I.I.P.A, L.B, Tirupattur spoke about the role of I.I.P.A. in Tirupattur and he highlighted that the present budget was paper less budget. He supported the present budget.

Dr. S. Sasikumar, Head, Department of Management Studies, Spoke about the medical and covid-19 condition. He highlighted that the present budget spent more money for health and vaccine. Finally he suggested 2% GDP should be spent on the health. Next panelist Dr. G. Prakashraj, Assistant Professor, Department of Commerce, spoke about the taxes, both direct and indirect taxes. Mr. R. Sankaran, Assistant Professor, Department of Economics spoke on the agricultural and rural department. The last panelist Dr. Royal Edward Williams, Assistant Professor, Department of Economics spoke about the allocation for Science and Technology. He said that the present budget allotted more funds for the growth of Science and Technology. He highlighted the percentage of money allotted for technological development. Finally Dr. A. Periyasamy Assistant Agricultural officer proposed the vote of thanks. Dr. J. Jacob Stanley Inbaraj introduced the panelist Dr. A. Xavier Susairaj PG Head, Department of Economics IIPA member coordinated the programme.

“Social Consciousness among Youth” 24th February 2021

Invited talk on “Social Consciousness among Youth” was organized by PG and Research department of Economics, Sacred Heart College (Autonomous) Tirupattur. The programme was conducted on 24th February 2021. Nearly 75 students and faculty members participated in the programme. The welcome address was delivered by Dr. A. Xavier Susairaj, PG Head, Department of Economics, Dr. J. Jacob Stanly Inbaraj, UG Head, Department of Economics introduced the resource person Mrs. Sineha Parthibaraja social activist and advocate, Tirupattur acted as the resource person for the programme of social consequences among youth. During the programme she converted, Caste, Karl Marx, importance of Youth in society, In security for women, Family Problems, Divorce. Finally Dr. R. Kurinji Malar, Assistant Professor Department of Economics proposed the vote of thanks.

Department of Commerce

The Department of Commerce organized a National Webinar on “Designing and Delivering Commerce Curriculum in Digital Era” on 12th June 2020 at 11.00 a.m. using the Google Meet Platform. The programme was intended to create awareness among the Commerce and Management teachers about the need for integrating online teaching and evaluation methods in the present generation which is becoming more and more digital. The resource person for the webinar was Dr. K Prince Paul Antony, Professor and Head, Department of Professional Accounting, Sri Ramakrishna College of Arts and Science, Coimbatore. The resource person in his lecture demonstrated how e-content can be developed using various software and the web platforms available for evaluating the students’ performance online. Around 100 staff members have attended the webinar and participated actively by interacting with the resource person. All the participants were given E-Certificates after getting feedback using Google Forms.

The Department of Commerce has organized a National level Webinar on “Revisiting the Service Quality Parameters in the Covid 19 Scenario” on 25th July 2020 at 10.00 a.m. using the Google Meet Platform. The programme was conducted with an objective to highlight the importance of service quality on the successful functioning of an organization and to present the challenges that business face in this respect in the Covid 19 times. The resource person for the webinar was Prof. S Karthikeyan, Assistant Professor and Dean of Student Affairs, from St. Joseph, Institute of Management, Trichy. The resource person in his address stressed on the importance of service quality. He explained to the participants on the various parameters of service quality and the need to revisit them in the present crisis situation. He made use of the GAPS Model of Service quality and presented the challenges that firms face in keeping their customers satisfied. He gave plenty of real time examples of businesses and cases for the participants to analyse. Around 200 staff members and students have attended the webinar and actively participated by interacting with the resource person. All the participants were given E-Certificates after getting feedback using Google Forms.

The Department of Commerce has organized a comprehensive quiz programme covering various subjects in the Commerce discipline like Accounting, Marketing, Income tax, Human

Resource Management etc. to engage the academic community. The activity was organized using the Google Forms and Google Docs online platforms. Fifty multiple choice questions were included in the quiz and the participants had to attend all the questions to complete the quiz. There was no negative marking and the participants who secured more than 50% marks were given an E-certificate and they were sent to their mail addresses. The event was actively participated and about 635 participants have taken part in the quiz.

The Department of Commerce has organized a quiz programme on working capital management covering various areas like components of working capital, adequacy and inadequacy of working capital, management of inventories, accounts receivable and payable, cash etc. optimum level of working capital etc. to engage the academic community and the business people. The activity was organized using the Google Forms and Google Docs online platforms. Fifty multiple choice questions were included in the quiz and the participants had to attend all the questions to complete the quiz. There was no negative marking and the participants who secured more than 50% marks were given an E-certificate and they were sent to their mail addresses. The event was actively participated and about 435 participants had taken part in the quiz.

The first activity of the department was the Orientation Course for the I B. Com Students, held on 29th August 2020 in CISCO Webex Meeting Platform. The senior students of the 2nd and 3rd years had planned out a pleasant welcome for their juniors. Dr. K. A. Maria John Joseph, Head, Department of Commerce, Sacred Heart College, addressed the students about the History, Mission, Vision and Core Values of Sacred Heart College. He also briefed the code and values of the Department of Commerce.

A seminar on “Importance of Language in Today’s World” on 20-02-2021 was presented by Dr. Perumal Kittusamy Asst. Prof. in Linguistics, Tamil University, Thanjavur, Tamil Nadu. The seminar was about the impact of language in the present world. The importance of English language and the skills the students are must to have in order to survive in the world. The seminar was very engaging and informative to the students as they were able to learn about different languages and the resource person has shown with illustration that learning a language is not a difficult exercise. A very engaging session took place between Dr. Perumal and the students who presented him with various queries to which he answered them in an apt way.

An active webinar on the “Importance of Investing and Awareness of Various Investment Avenues”, on 03-03-2021 was presented by Ms. Esther Ravi, Dr. Hepzibah Gnana Sinthiya headed by Ms. Gayathri Joshi. The webinar was on the awareness on investing and the gains of having invested in other sources to earn a passive income. The webinar invoked the inner investor of every student who attended the session and was filled with many areas of investing prospects and how a person should invest. The active session was useful to all the students and their queries were well answered. The students were all presented with an e-Certificate.

Department of Mathematics (UG & PG)

International Webinar Collaboration with IEEE - I

The international webinar was organized on 29-05-2020 through Google Meet between 3.00 p.m. and 4.00 p.m. The talk was given by Dr. P.K. Kishore Kumar, Assistant Professor, Department of Information Technology, Al Musanna College of Technology, Sultanate of Oman. He presented the webinar on “Introduction to Machine Learning”. All the UG, PG Students, Research Scholars and Faculty members actively participated in the webinar.

FDP Collaboration with IEEE - II

Faculty Development Programme (FDP) was organized on 03-06-2020 through Google Meet between 10.00 a.m. and 11.00 a.m. The resource persons for this programme were Ms. G.T. Bharathy and Ms. T. Thamilselvi, Associate Professors, Department of ECE, Jerusalem College of Engineering, Chennai. They shared their presentation on the topic “Exploring Virtual Connection in Google Platform”. All the PG Students, Research scholars and faculty members participated actively.

Webinar- III

The webinar was organized on 05-06-2020 through Google Meet between 11.00 a.m. and 12.00 p.m. The talk was given by Dr. D. Ajay, Assistant Professor, Department of Mathematics, Sacred Heart College (Autonomous), Tirupattur. He addressed on “Fuzzy Sets and Their Extensions”. All the UG, PG Students, Research scholars and faculty members actively participated in the programme.

STTP Collaboration with IEEE - IV

STTP was given on 12-06-2020 through Google Meet between 10.00 a.m. and 12.00 p.m. The talk was given by Prof. S. Bhavanisankari, Jerusalem College of Engineering, Chennai. She presented the webinar on “Matlab for Beginners”. All the PG, UG Students, Research scholars and faculty members actively participated in the programme.

International Webinar- V:

The international webinar was organized between 14th June 2020 and 16th June 2020 in Zoom Meet.

Day-1: The talk was given by Dr. H. S. Ramane, Karnatk University, Dharwad and Dr. Sunilkumar, M. Hosamani, Rani Channama University, Belagavi.

Day-2: The talk was given by Rev. Dr. Joseph Varghese Kureethara, Christ University, Karnataka, Bangalore and Dr. M. Yamuna, VIT University, Vellore.

Day-3: The talk was given by Dr. Suresh Elumalai, University of Haifa, Haifa, Israel. All the PG/UG Students, Research scholars and faculty members participated actively.

National Webinar Collaboration with IEEE - VI

The national webinar was organized on 24-06-2020 through Google Meet between 10.30 a.m. and 11.30 a.m. The talk was given by Dr. V. Raja, Assistant Professor, Department of Mathematics, PSG College of Technology, Coimbatore. He addressed on “Higher Education and Career Development in Mathematics”. All the UG, PG Students, Research scholars and faculty members actively participated in the programme.

National webinar collaboration with IEEE - VII

The national webinar was organized on 03/07/2020 through Google Meet between 04.00 p.m. and 05.00 p.m. The talk was given by Mr. V. Sudhakar, Associate Professor, Department of Mathematics, Jerusalem College of Engineering, Chennai. He addressed on “Discrete Probability Distribution - an Intuitive Understanding”. All the UG, PG Students, Research scholars and faculty members actively participated in the programme.

National webinar Collaboration with IEEE - VIII

The national webinar was organized on 13-07-2020 through Google Meet between 11.00 a.m. and 12.00 p.m. The talk was given by Dr. J. Renuka, Assistant Professor, Department of Mathematics, Women’s Christian College, Chennai. She presented the talk on “Introduction to Graph Labeling”. All the UG, PG Students, Research Scholars and Faculty members actively participated in the programme.

Webinar- IX

The webinar was organized on 20-02-2021 through Google Meet between 2.30 p.m. and 3.30 p.m. The talk was given by Dr. P. Balaganesan, Associate Professor, Department of Mathematics, AMET University, Chennai. He delivered a talk on “Application of Differential Equation in Marine Engineering”. All the UG, PG Students, Research Scholars and Faculty members are actively participated in the programme.

Webinar- X

The webinar was organized on 18-03-2021 through Google Meet between 2.30 pm and 3.30 pm. The talk was given by Dr. K. Ganesamoorthy, Assistant Professor, Department of Mathematics, Coimbatore Institute of Technology, Coimbatore. He addressed on “Matrices and its Applications”. All the UG, PG Students, Research scholars and faculty members actively participated in the programme.

MATLAB - Workshop- XI

The MATLAB – Workshop was organized on 19-03-2021. Session-I: 11.30 a.m. – 1.15 p.m. The talk was given by Dr. D. Ezhilmaran, School of Advanced Sciences, VIT, Vellore. Session -II: 1.45 p.m. – 3.30 p.m. The talk was given by Dr. S. Jagatheswari, School of Advanced Sciences, VIT, Vellore. All the PG Students, Research Scholar and Faculty members actively participated in the programme.

Department of Physics

The Department of Physics has conducted various programs like students' seminars, invited talks, intra-departmental competitions, outreach programme and International Webinars for the students in order to bring out the best from the students for life even during this pandemic. The first International webinar was organized by Dr. A. Dhayal Raj on the topic, "Material for Energy and Environmental Applications" on 24th June 2020. The resource persons were Dr. R. Arun Kumar NIT, Andhra Pradesh and Dr. D. Arun Kumar, Assistant Professor, Tohoku University, Japan. There were more than five hundred participants. The resource persons made the sessions interactive and lively. The next International webinar on the topic "Materials and Method for Bio-applications" was conducted by Dr. A. Dhayal Raj, on 7th July 2020. The speakers were Dr. Elayaraja Kolandhai, University of Florida, USA and Dr. M. Senthil Kumar, Assistant Professor, Karunya Institute of Technology and Sciences. All the participants showed great enthusiasm. There were about five hundred participants. There was at the end of the session, time for clarifications and clearing of doubts. The participants received their online certificates once they answered a few questions regarding the webinar in Google Form.

On 30th July 2020, there was first webinar on "Stress Management and Suicide Prevention during Covid-19 Pandemic". The resource person was Ms. Latha Munuswamy, Counsellor, Sacred Heart College, Tirupattur, She shared informative messages on personal issues and made the talk a very useful and reachable to everyone. Teachers' day was celebrated on 5th September 2020 for the staff of Department of Physics through Google Meet. Students shared their joy with recorded audio honouring staff for their hard work and commitment and it was played during the event. The 2nd webinar was on, "Enhancing Emotional Balance". It was organised by Rev. Dr. G. Theophil Anand on 13th November 2020 through Google Meet. The resource person was Rev. Dr. I. Joe Sanjay, Head of the Dept. of Counselling Psychology, Sacred Heart College, Tirupattur. He spoke on balancing emotions and getting rid of depression with his inspiring and motivating life stories and examples. Heart Beat 2021, annual college cultural fest was held on 8th January 2021 and Dr. M. Jose coordinated the event with the student secretaries. All the students showed great involvement with enthusiasm to exhibit their talent for dance, singing and drama. Girls won the overall 3rd place and boys won the overall 2nd place at the college level. The first student seminar was organised by Dr. S. A. Martin Britto Dhas on 27th January 2021 via Google Meet. Mr. J.

Deepan and Ms. A. Lakshmi Bhai from 3rd year gave their seminar on the God particle and Transformers respectively.

On 1st February 2021, 3rd webinar on the topic, “Physics in Modern World” was organized by the Dr. A. Dhayal Raj through Google Meet. The speaker Dr. R. Mangalam, PSG Institute of Technology, Applied Research, Neelambur, elaborated on the basic concepts of Physics and their applications in the modern world. Intra Department Quiz competition was held on 10th February 2021. The 2nd student seminar was held on 24th February 2021. Mr. A. F. Poomani, Mr. Shrinath, Ms. Shiny, Mr. Shiva and Ms. Sneha spoke on various topics, Electromagnetic waves and Wireless electricity Radio technology and Li-Fi technology respectively. It was great learning experience. The presenters answered all the questions by their peers.

A movie “TENET” based on the physics concept of arrow of time and entropy was shown to all the students on 24th February 2021. The student secretary and academic secretaries of the Department took this initiative and was very much welcomed by all the students. On 8th March 2021, students of 2nd year went to Matrapalli village for their outreach programme led by Dr. A. Dhayal Raj. About 30 saplings were planted as well there was awareness programme through rally for the villagers. Intra Department Debate was held on 17th March 2021 on the topic, “Nuclear Power Stations are a Boon or a Bane?” It was organized by Mr. V. Surya and Ms. V. Revathi. Dr. K. Parthibaraja from the Department of Tamil was the moderator of the debate. Mr. Prince Manaseeh (1st year), Ms. Immaculate (2nd year) and Mr. Surya (3rd year) debated on nuclear power stations as boon to country. Miss. Lavanya (1st year), Miss. Hepziba Martina and Mr. Selva kumar (2nd year) debated that nuclear power stations are bane to country.

Career opportunity programme for 3rd year student was organized by Dr. A. Albert Irudhayaraj on 19th March 2021. Prof. Robert, Assistant Professor, Govt. Arts and Science College, Krishnagiri was the resource person. The final year students had an opportunity to come to know of the available avenues for them in future. On 12th April 2021, there is going to be a farewell function for the 3rd year students through online.

Department of Chemistry

The Department of Chemistry Association activities started after college reopened for offline classes. As our department tradition the first programme was dedicated to P.A. Thomas memorial lecture which was conducted on 11.02.2021 and two of our Alumni gave lecture on “Research Career Prospects and Water Treatment” by Dr. Mohan Raj, Post-Doctoral Research Scientist, University of Düsseldorf, Germany, delivered a lecture on Recent Advances in Materials Chemistry and it was enlightening for the students. And Mr. Ram Prasad, Proprietor, Water Tech Private Limited, delivered a lecture about industrial water treatment methods. Due to the recent Covid situation in order to create awareness about the benefits of medicinal plants, Dr. Vaishnavi, BSMS, Chennai presented a talk on ‘Chemistry of Medicinal Plants with Siddha Perspective’

On 28.02.2021 an innovative talk on ‘Ecological and Chemistry Aspects of Insects’ was given by Mr. Sadasivam, Renowned Environmentalist & Writer,

On 09.03.2021 an invited talk on “Photocatalysis for Renewable Energy Applications” was delivered by Dr. P. Devaraji, Research Scientist, Henan University, Republic of China, Kaifeng city. He spoke about recent advancements and importance of renewable energy and also enlightened the career prospects of Chemistry for UG and PG students. The UG students from other departments like Physics and Mathematics also attended and interacted with the resource person.

Department of Computer Science

The Department of Computer Science began the Association Activities with the five days FDP webinar on “Knowledge Representations in Artificial Intelligence” for the students, scholars and teaching faculties from 20th July 2020 to 24th July 2020. Around 70 delegates from various states participated in the webinar.

Hands on training on Moodle was conducted on 03rd September 2020 at 11:30 a.m. to 12:30 p.m. Mr. A. John Martin, Assistant Professor, Department of Computer Applications was the resource person and the participants were I year students.

Project Methodology – I was conducted on 21st October 2020. Mr. Loganathan, Team Lead from the Bosco Softs Technologies was the resource person. He started his session with the templates of Project Proposal, Project Plan and System Study. It was very useful for the final year students to document their project reports.

Project Methodology – II was conducted on 30th January 2021. Mr. Loganathan, Team Lead from the Bosco Softs Technologies was the resource person. The session started with Laravel framework in PHP with sample projects.

Workshop on PHP was conducted from 08th to 10th February, 2021. Mr. Dinesh, CEO from Rathina Tech Private Limited, Tirupattur was the resource person and III year students actively participated.

The Intra Departmental IT Fest Commune 2K21 was organized on 12th March 2021 at Carreno Hall. The III Year students organized the programmes. First and Second year students actively participated and won the prizes.

Department of Biochemistry (UG)

UG Biochemistry Association conducted various programmes for the benefits of internal and external participants. From 20-04-2020 to 19-10-2020 (6 Months) National level Covid-19 Awareness Quiz was coordinated by UG Association President Dr. I. Niyas Ahamed, a total number of 12878 internal and external participants got benefitted. We conducted an FDP on “Research Activities in Present World-Understanding, Interdisciplinary and International Approaches” by Dr. Vijayshankar Ashokan, Researcher, Department of Chemistry and Chemical Engineering, Chalmers University of Technology, Sweden on 01-05-2020.

On 05-05-2020 Refresher course on Biochemistry and Microbiology Laboratory was conducted. A webinar/FDP on “What is Patent? and How to read it?” by Dr. Periyathambi Dhaiveegan, Senior Specialist, Technical Department, Tripod Nano Technology Corporation, Taoyuan, Taiwan was conducted on 14-05-2020. On 25-06-2020, Video Making Competition on 'Health and Hygiene' was conducted. In this online competition UG and PG Students participated from various colleges. A total number of 86 internal and external participants got benefitted. An E-Quiz on "Applied Microbiology" was conducted from 22-07-2020 to 24-07-2020 (3 Days). In this online quiz UG, PG Students, Research Scholars and faculty members participated from various colleges across the nation. A total number of 1645 internal and external participants got benefitted. On 05-09-2020 Teacher's Day was celebrated. From 25-09-2020 to 27-07-2020(for 3 Days), a national level quiz competition was conducted on Human Physiology, in which a total number of 3469 internal and external participants got benefitted. The student webinar titled on “An Introduction to Tissue Engineering” was conducted on 17-10-2020 from 2.00 pm to 3.30 pm through Google Meet, The Resource person was Dr. Jithendra Pannerselvam, Senior Lecturer, School of Pharmacy and Pharmaceutical Technology, International Medical University, Malaysia.

On 10-11-2020, Motivational Talk on “If you can dream it you can do it” was delivered by Bro. Yacop., II MSc Counselling Psychology, Sacred Heart College (Autonomous), Tirupattur.

On 12.11.2020 a webinar was chaired by Dr. N.M. Vanitha, Associate Professor & PG Coordinator, Department of Food Science & Technology, St. Joseph's College, Bangalore and during her talk, she elaborated on “Beneficial microorganisms for Agriculture”.

On 27-11-2020, a Virtual Interdepartmental Students Seminar was organized on COVID-19. Department of Biochemistry and Physics Department won the best presentation awards. Interaction was enabled during the event with Alumnus Mr. Thirumalaivasan, Forest Beat Officer, Tamil Nadu Forest Department, Tirupattur.

On 02-02-2021 a lecture on Dental Hygiene was delivered by Dr. Akbar MDS, Chennai. On 11-02-2021 a guest lecture on “Impact and Importance of Vaccine” was delivered by Dr. S. Jagannathan, Assistant Research officer, TCARV Production laboratory, Pasteur institute of India, Coonoor.

Both UG & PG Association conducted Science Academies' Virtual Lecture Workshop on “Recent Trends In Biological Sciences” sponsored by Indian Academy of Science, Bangalore, Indian National Science Academy, Delhi and The National Academy of Science, Allahabad and it was hosted by the Department of Biochemistry, Sacred Heart College, Tirupattur on 16th & 17th February 2021.

Department of Biochemistry (PG)

The PG and Research Department of Biochemistry had organized an Invited Talk entitled “Imperative of Whole Grain on Robustic Life” and it was delivered by Dr. Janaky Ranjith Kumar, Member, Network Professional of Food and Nutrition, Chennai on 30th November, 2020 through online (Google Meet) mode. All the PG students had participated and benefitted out of this programme, in which the chief guest Dr. Janaky Ranjith Kumar had elaborated the importance of whole grains in our diet.

In order to motivate the students psychologically an invited talk was organized on the title “Life is Gift. Life is not a Problem to be Solved but a Process to be Lived”. It was delivered by Rev. Fr. John Wilson, Director of Don Bosco Youth Empowerment Service, Director of Vocation Promotion, Salesian Province of Chennai, Don Bosco Youth Animation Center, Ennore, Chennai on 21st January 2021 through Google Meet.

An Invited Talk on “Basics in Bioinformatics” was delivered by the resource person Mr. Vivek Murali, CEO, Remura Biologicals, Krishnagiri through Google Meet on 24th February, 2021. A virtual workshop was conducted to train the students through a session titled “Tools In Bioinformatics” by the resource person Mr. Vivek Murali, CEO, Remura Biologicals, Krishnagiri through Google Meet on 19th March, 2021. A career guidance programme for the PG students was organized on 8th April, 2021 through Google Meet and the resource person Mr. Nikhil Padmanabhan, Research Scientist has explored the scope of Biochemistry in life science sector.

Department of Microbiology

The Department of Microbiology has conducted the Awareness Quiz on 28.07.2020 about Hepatitis Virus to create awareness to the students of the Department of Microbiology on the eve of “World Hepatitis Day”. Students actively participated in the event and gained knowledge about the Hepatitis virus and its preventive measures. To commemorate the birthday celebration of the Nobel Laureate and Eminent Microbiologist Sir Alexander Fleming, An online Quiz entitled “Sir Alexander Fleming Birthday Quiz” was organized and conducted from 06.08.2020 to 10.08.2020. About 5000 participants from Brazil, Algeria, Nigeria, Swiss, Pakistan, Bangladesh, Indonesia, South Korea, Jordan, Togo, Philippines, Saudi Arabia and from all states of the nation participated and gained the knowledge about Sir Alexander Fleming and his inventions.

The Department of Microbiology celebrated the Teacher’s Day on 05.09.2020. The programme was organized by Dr. K. Amala, Association President and Ms. A. Sudha, III B.Sc Microbiology (Association Student Secretary). All the B.Sc Microbiology students from three classes and four faculty members along with 128 participants took part in the event.

Hans Christian Gram Birthday Quiz, English and Tamil Essay Competition on Microscopes and Polio Awareness Poster Competition were conducted on 13.09.2020 followed by 31.10.2020 and 01.11.2020 respectively.

A talent show named “Microchampions” was conducted during February to encourage the students to express their talents on extracurricular non-academic activities. The competitions included several programmes like Essay Competition -English and Tamil, elocution - English and Tamil, Quiz Competition, Chess Competition, Tamil poem writing, Word Typing, Photography, Meme Creation (Picture and Video), Drawing Competition, Dumb Charades, Graphical Mute Competition, Connections and Word puzzle.

On 29-03-2021 a guest lecture on “Scope and Future of Microbiology” was organized by Department of Microbiology and was conducted through Google Meet. Dr. P. Sivasakthivelan, Assistant Professor, Department of Microbiology, Annamalai University, Tamil Nadu, India was the resource person. Nearly, 150 students participated and benefited from the event.

Department of Business Administration

Department of Business Administration organized a Virtual Poster presentation about World Environment Day on 5th June 2020. Quiz Competition on Marketing and Accounting for Managers was conducted from 9th June to 12th June 2020.

On 13th June 2020 a webinar titled “Managing Human Resource during Pandemic Situations” was organized. From 15th June 2020 to 17th June 2020 Virtual Meme Creation was organized. From 16th June 2020 to 20th June 2020 Online Quiz – Industrial Relation was conducted. From 17th June 2020 to 20th June 2020 Business Management Online Quiz was organized. Virtual Essay Writing Competition – Yoga Day was conducted from 21st June 2020 to 23rd June 2020.

On 25th June 2020 Drawing Competition about Human Life in Corona Period and Covid 19 Social awareness was organized. On 25th and 26th June 2020 a Webinar on Leadership in Tamil Classical Literature was organized. Students benefited out of the webinar. From 27th June 2020 to 30th June 2020 online quiz on Economics for Management was conducted.

From 6th July 2020 to 10th July 2020 Deca Virtual Series – Webinar was organized .The topics of the webinar are as follows: Emotional Management, Creative Skills, Basic Research Methods, IT – Consumerism, Emerging Trends in HRM. Plenty of Students and teaching faculty from various colleges were benefited from the webinar. From 8th July 2020 to 10th July 2020, online quiz on Banking and Insurance was conducted.

From 20th July 2020 to 24th July 2020 Penta Virtual Series – Webinar was organized .The topics of the webinar were: Personality and Crisis Management, Evolution of Digital Marketing Communication, Service Marketing Challenges and Opportunities, Role of Information Technology in Management, Managing Workplace Stress, Challenges of HR Managers in Covid 19, Training Effectiveness, An Introduction to Credit Risk Management, Management Education: Issues, Challenges and Opportunities, Focus on your Clock. Many of students and teaching faculty from various colleges benefited from the webinar.

Induction programme for the first year BBA students was conducted on 28th August 2020. From 28th August 2020 to 31st August 2020, online quiz –production Management was

conducted. On 5th September 2020, Teachers Day and Fresher's Day were organized by the students. From 5th September 2020 to 6th September 2020, online quiz about Teachers Day was conducted.

On 7th October 2020, Motivational Talk was delivered to the BBA students through webinar "The Keys to Success". On 9th October 2020, an Invited Talk was delivered to the BBA students through online "Work Force Future". On 7th November 2020, a debate was organized by the students to share their knowledge.

From 28th November 2020 to 30th November 2020, SHIBA FEST 2021–Intra Department activity was organized by BBA students. Lots of events were organized in the SHIBA FEST 2020. On 25th February 2021, "Career Opportunities" Webinar was organized. Final year BBA students participated actively during the webinar. On 4th March 2021, ADMINFEST 2021 was organized successfully.

PG and Research Department of Social Work

Fresher's day was celebrated on 30th January 2021 at MSW Department in 2nd year MSW classroom at 12:30 p.m. Miss Monalisakamei II MSW welcomed the gathering. Rev. Fr. Andrews Raja, Head, Department of Social Work, faculty members and the students participated in this celebration. The celebration concluded at 2:00 p.m. with vote of thanks by Firojkumar Digal.

The Intra-department sports meet was conducted by PG and Research Department of Social Work, Sacred Heart College (Autonomous) on 1st February 2021. The event was conducted by first and second year students of MSW department under the guidance of Dr. T. Selvam the Association President. The total participants were 86, who were divided into 2 groups including the faculty members. The Sports meet started at 2.30 p.m. and the chief guest of the event was Rev. Dr. Gandhi Kallarasan, Administrator and Campus Minister of Sacred Heart College. The programme concluded at 6.30 p.m. with the words of appreciation by Rev. Fr. J. Andrews Raja, Head, Department of Social Work.

17th Blood Donation Camp in collaboration with CMC Vellore an annual feature at Sacred Heart College (Autonomous) Tirupattur, was pioneered and organized by the P.G. & Research Department of Social Work. The coordinated efforts of the Association of Social Work students and staff have facilitated in raising 149 units of blood from college students of various departments: Mathematics, Physics, Chemistry, Microbiology, Biochemistry, Business Administration, Computer Applications, Commerce, English, Computer Science, Economics, Psychology & Social Work Departments. CMC team consisting of doctors, nurses and lab technicians arrived in the department at 9.30 a.m. on 10th February 2021. The programme began with a welcome address followed by prayer song. The students were addressed on the importance of blood donation by the Head of the Department of Social Work. Total numbers of participants were 232. This event was coordinated by Mr. Arul (CMC) & Dr. K. Arokiaraj, Assistant Professor, Department of Social Work.

Department of Computer Science (PG)

The PG Department of Computer Science organized a seminar on “Cloud Computing Services and its Offerings with Microsoft Azure” on 27th February 2021. Totally 150 students from various departments of our college participated in this seminar. The seminar’s objective was to understand cloud computing, Microsoft solutions to enable faster innovation, flexible resources, and economies of scales, Cloud computing services for business, and Dive into Azure with a live experience. Mr. John Bosco Vijay Anand (Principal Architect, Wipro Technologies, Bengaluru) was the morning session's Resource Person.

The afternoon sessions was presented by Mr. Vijay Amalraj (Emerging Technologies Lead, IBM, Bengaluru). This session introduced the topics like the basics to the Internet of Things, The Arduino Platform, Introduction to Embedded C Programming, IoT Enabling Technologies-Sensors and Communication protocols, IoT Design Methodology, Arduino Programming & Interface of Sensors, Interfacing sensors with Arduino, IoT applications, IoT Physical Servers & Cloud Offerings.

Department of Counselling Psychology

On 12th June 2020, the Department of Counselling Psychology organized a seminar on “Body Language - The Manifestation of the Unconscious”. The resource person Rev. Fr. Arul Xavier Director from Fountain College explained the types of non-verbal communications more specially proxemics, oculosics and kinesics. Workshop on “Graphology – Handwriting Analysis” was organized by the Department of Counselling Psychology on 25th, 26th & 27th June 2020 in collaboration with Fountain College, Sundampatti. The resource person Rev. Fr. Arul Xavier offered insight on various themes such as margin, baseline, zones in writing, size of the letters, pressure speed and pacing. In collaboration with Fountain College the department organized a seminar on “Dream Analysis” on 10th & 11th July 2020. Rev. Fr. Arul Xavier the resource person introduced the concept of dream and the psychology behind it. On 5th September 2020 the department celebrated Teacher’s Day to thank and appreciate the commitment and the hard work of the teachers.

Webinar on “Managing Stress during Covid-19” was conducted by Ms. Latha Munuswamy on 26th September 2020. She explained on how one can keep positivity during COVID-19 pandemic. Seminar on “Group therapy” was organized on 30th September 2020, the resource person was Rev. Fr. Arul Xavier from Krishnagiri – Fountain College. He explained Group therapy which helps individuals to develop communication skills and socialization skills. The first year student’s induction programme was held on 3rd October 2020. Rev. Dr. I. Joe Sanjay, Head, Department of Counselling Psychology welcomed everyone and gave the overall introduction about the department. Rev. Fr. Mani Lazar SDB, on 12th October 2020 delivered a lecture on “A Journey towards Integration”. He spoke about how our body, mind and soul are integrated. A webinar on “Maintaining Professionalism in Counselling” was organized by the Department of Counselling Psychology,

On 23rd October 2020 Ms. Christina Venita Deepa, Student Counsellor, Loyola College, Chennai delivered a lecture. Rev. Dr. I. Joe Sanjay, conducted a seminar on “Heterosexual Relationship”. On 12th January 2021.VKD [Visual Kinesthetic Dissociation] and SWISH therapies were conducted by Rev. Dr. Joe Sanjay on 19th January 2021. A seminar on “Humour and its Many Faces” was organized by the Department of Counselling Psychology on 23rd February 2021. The resource person was Rev. Fr. A.M. Matthew Adukanil. The first year students attended the “Healing the Inner Child Programme” on 27th February to 2nd March 2021, in Fountain Institute of Counselling and Psychotherapy, Sundampatti, Krishnagiri. The resource person was Rev. Fr. Arul Xavier. On 12th March 2021 a seminar on “Women Psychology” for the women students was organized. The resource person was Rev. Fr. Arul Xavier.

Department of Computer Applications (PG)

SHINE (Sacred Heart Informatics Network for Enterprises) provides a platform to showcase the students’ talents and technical skills in the field of Computer Science and Information Technology. The association activities were conducted on every 6th day order during the last hour. The students had been grouped into 6 teams with a staff in-charge. The teams were given schedule for presentation. Each team had delivered a presentation on Current Technologies, Tools, etc. They conducted Quiz, Discussion, Interview Techniques, etc., in between the session and the team which performed well was awarded.

SHINE association organized an intercollegiate symposium where 65 students from 16 colleges took part and exhibited their skills. During this academic year SHINE organized 3 invited talks by the alumni of our department. The sessions were handled by Mr. Rubesh, under the technical topic “Latest Trends in IT”, Mr. Vignesh under the topic “Java Framework” and Ms. Hema under the topic “Spring Boot”. Annual workshop was held in the month of February 2021.

Sacred Heart Institute of Management Studies (SHIMS)

SHMS organized various programmes and activities to inculcate the business acumen among management student community. The following programmes were executed: Short-term e-learning certificate courses, International colloquium to have foreign exposure via online platform, e-Guest lectures on various management specialization, e- national level conference sponsored by AICTE, self-assessment test to identify the inner caliber of the students. As per AIMS invitation and instruction, Department had “National Management Week” celebrations via online platform, instilling the students to be socially responsible citizen. To bring out the practical learning for the young budding managers, Center for Employability Enhancement (CEE) organized corporate meet, corporate connect and meet the entrepreneur through online platform. SPROUT (Students induction programme), Campus to employability and corporate training were offered to the students to make them ready for every good work forever. Department had discussion on Union Budget 2021 in which students were divided into teams to discuss various sectors impact and they gained practical knowledge and experience.

Center for Employability Enhancement (CEE) SHIMS, organized a four day residential training programme for the students for the placement push to provide required skills like good communication skills, management skills, negotiation skills, creative thinking, brainstorming and self-assessment.

Academic Association Activities (Shift-II)

வீரமாமுனிவர் தமிழ் மன்றம்

இவ்வாண்டின் தொடக்கத்தில் முதல் நிகழ்வாக 05-03-2021 வீரமாமுனிவர் தமிழ் மன்றத்தின் சார்பாக மாணவச் செயலர் மற்றும் துணைச் செயலர் தேர்ந்தெடுக்கப்பட்டனர்.

10-03-2021 அன்று போப் பிரான்ஸிஸ் அரங்கத்தில் காலை 10.30 மணியளவில் 'பூவுலகில் பூச்சிகள்' என்னும் தலைப்பில் சூழலியல் அறிஞர், தோழர் கோவை சதாசிவம் அவர்கள் கலந்து கொண்டு சிறப்புரையாற்றினார். இந்நிகழ்வில் ஆசிரியர்களும், மாணவர்களும் பங்கேற்று கலந்துரையாடல் செய்தனர்.

இளங்கலை மற்றும் முதுகலைத் தமிழ் மன்றம்

இவ்வாண்டின் இரண்டாம் பருவத்தின் முதல் நிகழ்வாக 20-01-2021 அன்று திரைக்களம் சார்பாக மாணவர்களுக்கான ஆவணப்படம் குறும்படம் (பாவக் கதைகள்) திரையிடலும் கலந்துரையாடலும் நடைபெற்றது.

03-02-2021 அன்று திரைக்களம் சார்பாக மாணவர்களுக்கு 'தி கிரேட் இந்தியன் கிச்சன்' என்னும் மலையாள திரைப் படத்தைத் திரையிட்டு கலந்துரையாடல் நடைபெற்றது.

24.02.2021 அன்று பல்கலைக்கழக மானியக் குழுத் தேர்விற்கான பயிற்சி வகுப்பு தொடங்கப்பட்டது. பயிற்சி வகுப்பில் துறையின் பேராசிரியர் முதுமுனைவர் சு.பா. பாலமுருகன் அவர்கள் பயிற்றுநராகக் கலந்துகொண்டு மாணவர்களுக்குப் பயிற்சியளித்தார். இதன் தொடர்ச்சியாக வாரத்தின் ஒவ்வொரு நாளும் முறையே பேராசிரியர்கள் முனைவர் பி.பாலசுப்பிரமணியன், முனைவர் ம.சரளாதேவி, முனைவர் ந.சோழன், முதுமுனைவர் சு.பா. பாலமுருகன் மற்றும் முனைவர் அ.மாலதி ஆகியோர் மாணவர்களுக்கு வகுப்புகளை எடுத்தனர்.

27-02-2021 அன்று இளங்கலை, முதுகலை மாணவர்கள் மற்றும் வகுப்பாசிரியர்களும் சேர்ந்து சென்னையில் நடைபெற்ற புத்தகக் கண்காட்சிக்குச் சென்று ஆசிரியர்களும், மாணவர்களும் புதிதாக வந்த நூல்களை வாங்கிப் பயன் பெற்றனர்.

12-03-2021 அன்று தேடல் ஆய்வரங்கம் மாணவர்கள் மற்றும் பேராசிரியர்களுடன் நடைபெற்றது. அந்நிகழ்வில் பல மாணவர்களும் பேராசிரியர்களும் புதிய நூல்களை அறிமுகம் செய்து விமர்சனம் செய்தனர்.

18-03-2021 அன்று தேடல் ஆய்வரங்கம் மாணவர்கள் மற்றும் பேராசிரியர்களுடன் நடைபெற்றது. அந்நிகழ்வில் பல மாணவர்களும் பேராசிரியர்களும் நூல்களை அறிமுகம் செய்து விமர்சனம் செய்தனர்.

Department of English (UG & PG) (Shift-II)

Industry 4.0 Scenario: Redefining Language and Literary Studies

The International Virtual Conference IVC 2020 titled Industry 4.0 Scenario: Redefining Language and Literary Studies was collaboratively organized by the English Departments of the four institutions namely: Tiruvalluvar University, Vellore; Loyola College, Chennai; Sacred Heart College, Tirupattur and Government Thirumagal Mills College, Gudiyattam between 13th and 17th July, 2020. Nine resource persons were from South Africa, Zambia, Libya, Saudi Arabia and Bangladesh and six were from India. About 700 participants attended the webinar and 280 papers were presented.

Report on E - Quiz

Department of English conducted an E - Quiz on “English Literature” on 19.06.2020 & 20.06.2020. It was coordinated by Rev. Fr. Dr. K.A. Maria Arokiaraj, Additional Principal & Head, PG Department of English and Mrs. Mary Jenif, Head, UG Department of English and convened by Mr. S. Prabhakaran and Mr. S. Jeevananthan.

The E - Quiz was open for Faculty, Literature students and those preparing for NET/SET. E – Certificate was provided to participants who scored 50% and above through their registered E-Mail-ID.

Around 544 participants from all over the country participated in the event, in which 326 passed and got E – Certificate. The event got participants across the country, like IGNOU, Tinsukia (Assam), St. Thomas College, Kozhencherry, Mar Theophilus Training College Nalanchira, Trivandrum and St. Aloysius College, Thrissur, Kerala. The event received overwhelming response from faculty and student community.

Report on Freshers’ Day

On 11th February 2021, Department of English (Shift-II) organized Freshers’ Day in Mother Teresa Hall. Senior students conducted various games for freshers and distributed prizes for the winners. A video depicted the 5th year celebration of Heart Beat winning. Some of the students mentioned about rules and norms of the department. Rev. Dr. K. A. Maria Arokiaraj, Head Department of English (PG) initiated his talk by congratulating the students on winning cultural- Heart Beat 2021. He welcomed the freshers and mentioned the rules of the department as well as college. As a step towards green, the freshers were presented with saplings and seeds.

Report on Invited Talk on Humour

On the 25th February 2021, Department of English organized an invited talk on Humour and its numerous dimensions. The asset individual was Rev. Fr. A.M. Mathew Adukanil SDB, a previous collaborator educator of English and an advisor Miss. Priscilla from the I M.A Mastered the ceremony. Mr. Peter Conisious Prabhu introduced the asset individual and exemplified the dynamics of the day. The talk highlighted the various nuances and crucial dimensions of the emotion called humour.

Lit. Week 2021

Lit. Week was organized by Department of English from 16.03.2021 till 19.03.2021 where students explored and expressed their talents. On 16.03.2021 Lit. Week 2021 was inaugurated by Rev. Dr. K.A. Maria Arokiaraj. Inaugural address was given by Rev. Dr. K.A. Maria Arokiaraj. I UG and I PG gave their performance in Mother Teresa Hall. I BA English performed dramatic monologue, nearly 44 members participated followed by I MA students enacting a skit based on Dryden's All for Love. Judges were Mrs. L. Thirunirai, Mr. D. Henston and Mr. S. Jeevananthan.

On 17.03.2021 II BA & III BA English students performed in Pope Francis Hall. II BA English did group singing dividing themselves into 4 groups. III BA students performed Mime. 3 groups had participated. Dr. P. Helen Hema and Mr. S. Prabakaran were judges. On 18.03.2021, Wednesday II MA English students performed Mime, Literary Parade, Musical and spatial intelligences activities and a skit. 42 students had participated in it. Programme judges were Mr. S. Prabakaran and Dr. P. Helen Hema.

Valediction of Lit. Week 2021 took place on 19.03.2021 in Mother Teresa Hall. All the winners of the Lit. Week were announced by Miss. U. Anto Maria Eusobia and prizes along with certificates were distributed by Rev. Dr. K.A. Maria Arokiaraj & Mrs. Mary Jenif. Lit. Week 2021 was seen as an occasion to unmask talents and skills of the students. It was explored and expressed well.

Report on Invited Lecture on Content Writing

On 24th March 2021, Department of English organized an invited lecture on Content writing and its numerous dimensions. The ardent resource person was Dr. Rathina Prabhu, Assistant Professor, Department of English, St. John's College, Palayamkottai. Miss. Sofia Selvarani introduced the resource person and Rev. Dr. K. A. Maria Arokiaraj spelled out the dynamics of the event. The lecture highlighted the various essential dimensions of content writing.

Department of Commerce (UG & PG)

National Level E-Quiz on Finance and Accounts

The PG Department of Commerce with its staff members decided to conduct an E-Quiz for the welfare of the academicians and others in the field of commerce. It had organized a National Level E-Quiz titled as “E-Quiz on Finance and Accounts” from 04.06.2020 to 08.06.2020 (for 5 days). About 1,615 participants registered for the E-Quiz and received their e-certificates. Mr. G. Rajkumar was the organizing secretary for this event. Dr. K. Anbalagan (HoD-PG) and Dr. G. Devi (HoD-UG) were the conveners of this event.

National Webinar on Issues and Challenges faced by Consumers during COVID-19

The PG Department of Commerce organized the National Level Webinar titled “Issues and Challenges faced by Consumers during COVID-19” on 09.06.2020. About 481 participants registered. The programme was organized through “Google-Meet” as well as “YouTube”. About 194 participants attended the webinar from various colleges (including Faculties, Research Scholars and Students) through “Google Meet” and “YouTube” and successfully got their “e-certificates”. Resource Person for this Webinar was Dr. K. Kishore, Assistant Professor, Department of Commerce, Voorhees College, Vellore.

National Webinar on Career Opportunities in Commerce

The PG Department of Commerce had organized a National Level Webinar titled “Career Opportunities in Commerce” dated 30.01.2021. The programme was organized through “Google-Meet”. About 122 participants attended the webinar from various colleges (including Faculties, Research Scholars and Students). Welcome Address was given by Ms. D. Pricilla, from II Year M. Com. Inaugural Address was given by Rev. Dr. K.A. Maria Arokiaraj, Additional Principal. Resource Person for this Webinar was Mr. M. Devendiran, Soft Skill Trainer and Founder, Vedhams Midway Training Consultancy, Tirupattur. He shared his knowledge with the participants, about the career opportunities and scope available in the field of commerce, especially for the students.

Orientation Programme on Professional Courses in Commerce

An Orientation Programme on “Professional Courses in Commerce” was organized by the PG Department of Commerce for both UG and PG Students on 02nd March 2021. Students gained knowledge on Professional Courses like Chartered Accountant and ICWA. The resource person for the programme was CA. T. Pothi Madhavan, M. Com., FCA. Chartered Accountant, Nungambakkam, Chennai.

Special Invited Talk on Competitive Exams

The PG Department of Commerce organised a “Special Invited Talk on Competitive Exams” dated 15.03.2021 through Google Meet. About 123 participants attended the programme through “Google Meet” and successfully got their “e-certificates”. Welcome Address was delivered by Mr. S. Karthik, Assistant Professor, Department of Commerce. Resource Person

for this Invited Talk - II was Mr. Venugopal, Cooperative Sub Registrar, Chengalpattu. The vote of Thanks was proposed by Mrs. M. Sangeetha, Assistant Professor, Department of Commerce.

National Level E-Quiz on Finance and Accounts

The PG Department of Commerce had organized a National Level E-Quiz titled “E-Quiz on Commerce” from 14.03.2021 to 15.03.2021 (for 2 days). About 321 students had registered for this E-Quiz and they successfully got their e-certificates. Mr. S. Karthik and Mrs. M. Sangeetha were the organizing secretaries of this e-quiz event.

Department of History

Apart from the Fresher’s Day Celebration, the association conducted three programmes for the academic year 2020-2021. The programmes include invited talk and two special talks through online Webinar.

An invited lecture on Periyar’s Self – Respect and Social Justice was organized by the History Association, Department of History, Sacred Heart College, Tirupattur on 17th September, 2020 for the commemoration of the 142nd birth anniversary of E.V.R. Periyar. In which Dr. P. Kumar, Assistant Professor, Department of History, welcomed the Chief Guest Dr. D. Leslin, Head, Department of History, He delivered a lecture regarding the self-respect movements and social justice. Mr. C. Pandeewaran proposed a vote of thanks.

A special lecture on India’s Freedom Struggle: Role of Minorities in Tamil Nadu was organized by the History Association, Department of History, Sacred Heart College, Tirupattur, through webinar on 31st October, 2020. In which Mr. C. Pandeewaran, President of the History Association welcomed the Chief Guest Dr. P. Nallathambi, Assistant Professor, Department of History, Arul Anandar College, Karumathur and participants of the program with a short introduction of the programme. He delivered a lecture regarding the role of Minorities and their contribution to the Indian freedom movement. Dr. P. Kumar proposed the vote of thanks.

A special talk on Social Conditions of Ancient Tamils through the Lance of Hero Stones was organized by the History Association, Department of History, Sacred Heart College, Tirupattur through webinar on 1st March 2021 at 11.15 am. In this webinar, Mr. C. Pandeewaran, President of the History Association, Assistant Professor, Department of History, introduced the theme of the topic and he welcomed the chief guest Dr. M. Maruthupandiyan, Curator, Government Museum, Madurai. He delivered a lecture on Social Conditions of Ancient Tamils through the Lance of Hero Stones. In which he emphasized social life of the people and their dressing pattern and ornaments, their position and nature of work through literature and hero stone in a vivid manner through presentation Mr. K. Premkumar proposed a vote of thanks.

Department of Mathematics (UG & PG)

The Department of Mathematics commenced the association activities by organizing a webinar on 28th October 2020 through Google Meet application. Dr. G. Britto Antony Xavier, Associate Professor, Department of Mathematics, Sacred Heart College (Autonomous), Tirupattur was the resource person, who delivered a talk on ‘ $e_n(x)$ Theory in Difference and Differential Equations’ to both undergraduate and post graduate students.

A webinar on ‘If you can dream it, you can do it’ was organized on 5th November 2020 for the freshers, for which Bro. Yacop, SDB, II M.Sc Counselling Psychology, Sacred Heart College (Autonomous), Tirupattur was the resource person

Rev. Dr. I. Sanjay, Head, Counselling Psychology, SHC, Tirupattur delivered a talk on “Enhancing Emotional Balance” for the UG students on 19th November 2020 which was organized by Rev. Dr. S. John Borg, PG Head, Department of Mathematics (Shift II), Sacred Heart College, Tirupattur.

On 28th November 2020, a written Quiz on non-verbal reasoning was conducted through MOODLE for the UG and PG students separately for refining their Basic knowledge in Mathematics under the supervision of Dr. B. Govindan and Mr. N. Avinash.

On 11th January 2021, a Student Seminar was conducted for the PG students. Fresher's day was celebrated for both U.G and P.G students on 13th February 2021.

Dr. Harekrushna Behera, Research Assistant Professor, Department of Mathematics, S.R.M. Institute of Science and Technology, Chennai, delivered an invited talk on “Numerical and semi-Analytical techniques for wave-structure interaction problems” to both undergraduate and postgraduate students on 13th February 2021.

Dr. Manimaran, Assistant Professor, Department of Mathematics, VIT University, Vellore, delivered a talk on “Sets and its Functions” to UG and PG students on 26th February 2021 which was organized by Dr. S. U. Vasanthakumar, UG Head, Department of Mathematics (Shift II), Sacred Heart College, Tirupattur.

Department of Physics (UG)

The PG & Research Department of Physics organized a Two Day Webinar on “Frontiers of Material Science Research” on 12th and 13th August 2020. "Role of National Physical Laboratory (CSIR-NPL) for Advanced Scientific Research" was organized on 12th August 2020 at 12.00 PM by Dr. N. Vijayan Principal Scientist & Associate Professor (AcSIR), Indian Reference Materials (BND) Division, CSIR-National Physical Laboratory, New Delhi-110012. And "Exploring Chromophores in Ternary Metal Oxides towards the Development of New Pigment Material" was organized on 13th August 2020 by Dr. Tamilarasan Subramani Postdoctoral Fellow, Professor Alexandra Navrotsky's Lab, School of Molecular Science, Tempe, AZ USA -85282, which provided a unique opportunity to bring together 150

registered participants of research community over the different countries, out of which 84 participants were present for the webinar online. Dr. K. A. Maria Arokiaraj Additional Principal, Sacred Heart college (Autonomous) endorsed the webinar and Mr. C. Thirupathi, UG Head, Physics and Dr. S. Kalaiarasi Assistant Professor of Physics, introduced the speakers of the webinar, Dr. N. Vijayan and Dr. Tamilarasan Subramani speakers of the session gave a strong legitimacy about material science. Presentations were followed by panel discussion by the chairperson of the sessions and concluded the webinar by emphasizing the impact of Material Science Research and relevance to higher education in material science research at NPL for undergraduate students.

The fresher's day programme was conducted on 11th February 2021. It was started with prayer song. Nithiyandham (III year) presented the master of ceremony. The welcome address was given by M. Arun from (III UG). English speech by S. Esaivani (III UG) Tamil poem by Sandhiya (III UG). Mr. C. Thirupathy, Head of Department gave motivational speech for first year students of UG.

The Department of Physics organized the invited talk on 11th February 2021 for II & III Year UG and PG in Google meet. The invited talk was given by the chief person Dr. A. Padmanaban (Post-Doctoral fellow, SSN College of Engineering, Kalavakkam, Chennai). Dr. L. Anandaraj introduced the chief guest the lecture was titled "Electrochemical Sensing of Analyte Molecules". The event was concluded with vote of thanks which was proposed by M. Karthick (III UG).

The Department of Physics organized an invited talk on 26th February 2021 for UG and PG women students. The invited talk was given by Ms. Latha Munusamy (Student Counsellor) Sacred Heart College Tirupattur. The welcome speech was given by S. Deepika (3rd UG) followed by Ms. S. Kalaiarasi, Assistant Professor, Department of Physics introduced the chief guest. The invited talk was on Physical and Mental wellness.

Department of Physics (PG)

On 3rd December, 2020 a webinar was conducted on the topic "Higher Education Opportunities (HOPE) For Science Student" by Dr. G. Ramalingam, Assistant Professor, Department of Nanoscience and Technology, Alagappa University, Karaikudi. The student seminar was organized on 9th March 2021; three of our M.Sc. students delivered an informative lecture on theoretical aspects and innovation in Science. A student seminar was organized on 12th March 2021. Three of the PG students delivered a talk on different topics like importance of Maxwell equations, Nanomaterials for energy application and so on.

On 15th March 2021 an invited talk on "Future Nanotechnology on the Grounds of Cost Benefit and Risk Management" was delivered by Dr. N. Jabena Begum, Assistant Professor, Department of Physics, D.K.M College for Women (Autonomous), Vellore. She highlighted the importance of green synthesis of nanoparticle and its biological application.

On 22nd March 2021 an invited lecture was delivered by Dr. S. A. Martin Britto Dhas on the topic “Role of Shockwaves on the Enhanced Structural and Optical Properties of Metal Oxide Nanoparticles.

Department of Chemistry (UG & PG)

Three days webinar on “Principles and Practices on Phytochemical Research” was conducted from 22nd July 2020 to 24th July 2020 in collaboration with Auxilium College (Autonomous), Vellore.

The Department of Chemistry celebrated Teacher’s day on 5th September 2020 through Google meet, more than 150 students participated.

Rev. Fr. Martin Sowariappan Memorial Lecture programme was organized on 11th November 2020 with resource person, Mr. Sridhar Lakshmanan, Founder Ecologin and Thaen. through Gmeet. The programme was well attended by more than 300 students of both shift I and II.

In order to gain the research findings, M.Sc., final year students attended a webinar on “How to Convert Research Projects into a Patent” on 12th January 2021 through Google meet Dr. Preetham Balakrishnan, Assistant Professor, Tamil Nadu Law College, Tiruchy was the resource person.

An Invited talk was organized with two of our prominent alumni, Dr. Mohanraj, University of Munich, Germany and Mr. Ramprasad, Aqua Technologies, Chengam on 18th January 2021 The main theme of the talk was Prospects of Chemistry and Entrepreneurship.

Fresher’s day celebration was conducted on 12th February 2021, to welcome the newly joined students from various schools and colleges in the presence of Heads and staff.

Department of Computer Science

On 2nd June 2020 and 3rd June 2020, the Department organized a National Webinar on “Python for Data Science”. The resource person was Mr. Praveen Benedict, Co-Founder of Phosphene, Chennai. All the participants were given certificates.

A National Webinar entitled Software Testing-is it for Yor? was organized on 4th July 2020 by Dr. S. Reine de Reanzi, Director-Solution Production, Zinier Technologies Pvt., Ltd, Bangalore,. Participants were provided with certificates.

On 20th August 2020, the department organized the third National Webinar on Cloud Security. Mrs. Nalini Kannan, Senior Technical Architect, IBM- India Software Labs, Bangalore was invited as resource person. Certificates were provided to participants. For all

three National Webinars, the students of Computer Science were invited. They took part and benefitted out of these webinars.

On 21st January 2021, a seminar on Real-time Data Science Applications was held. Mr. N. Sakthivel, Assistant Professor, Department of MCA, Adiyaman Engineering College, Hosur was invited as resource person.

Mr. P. Karthick, Assistant Professor, Department of Computer Science, took a session on 'Data Analysis using Excel' for the second and third year students of Computer Science on 27th January 2021.

An IoT Seminar on the Evolution of Modern Computing Paradigms was conducted on 5th February 2021. Dr. Saseekala, Assistant Professor, Department of Computer Science, MGR College, Hosur, was invited as guest speaker.

The Fresher's Day programme was organized on 12th February 2021. The Relationship Management session was conducted on 8th February 2021, Miss. Latha Munusamy, Counsellor, Sacred Heart College (Autonomous), Tirupattur spoke to the students about the dangers of the toxic relationship. It was conducted separately for women and men students.

In order to increase the competitive spirit among computer science students, Commune 2K21, an intra-department programme was conducted on 12th February 2021. Nine events were conducted. Students of I and II years of both the shifts participated and won cash awards.

Department of Computer Applications (UG)

The activities of Computer Applications (UG) Association for the academic year 2020-2021 began with an inauguration and a special Training on "Digital Teaching for School Teachers" on 14th June 2020. Mr. K. Krishnakumar and Dr. J. Merlin Florence, Assistant Professor gave a platform to Digital Teaching for School Teachers, though online mode. A seminar on Android Development was organized by Dr. J. Merlin Florence, on 6th July 2020; Mr. Elavarasan, an expert in android app development was the resource person and he shared his expertise with the participants. .

A special invited talk on "Stay Productive and Be Productive" was delivered by Rev. Fr. Arul Xavier, Director of Fountain of Capuchin Institute of Counselling Psychotherapy and Research Centre, Krishnagiri, on 12th June 2020. He motivated and inspired the interest in working environment among the students during pandemic situation. A Hands on session – "Word Press" was arranged by Mr. T. Prabakaran, Assistant Professor, on 15th December 2020, Intercollegiate IT symposium was organized by the department through Online on 12th February 2021 and 274 external participants registered from various colleges of different parts of India. Rev. Dr. K.A. Maria Arokiaraj, Additional Principal gave the presidential address. The participants actively participated in all the events.

Five day training programme on “Software Documentation” was organized by the department. Mrs. Arul Deepa, Technical Writer, CISCO, Bangalore, was the resource person. She trained the students in a professional way of preparing documents. A unique programme on “Career Options after BCA” was conducted on 16th March 2021, Mr. Rubesh, Development Lead, People 10 Technology, Bangalore animated the students. He gave technical skills and industrial exposure to the students.

Department of B.Com (Computer Applications)

The Department of B.Com (CA) organized a “National Online Quiz on Commerce and Accountancy” with the blessings and guidance of College Management from 03.06.2020 to 07.06.2020. The online quiz had been organized by Mr. B. Seenivasan (Convenor), Mr. P. Saravanan (Head and Coordinator) and faculty members of the department. About 2,265 participants actively participated in the National Online Quiz. Out of them more than 400 were faculty members. E-Certificate has been issued to 1,555 participants to those who secured 50% marks and above.

The Department of Commerce (CA) organized a “National Webinar on Issues and Implications of Covid-19 on the Banking and Financial Sector (IICBFS)” with the blessings and guidance of College Management on 04.07.2020 at 10.45 am. The National Webinar had been organized by Mr. P. Saravanan (Head), Mr. B. Seenivasan (Convenor), Mrs. C.Dharmadevi (Convenor) and faculty members of the department. 864 participants registered for the webinar through Google forms. The National Webinar on IICBFS was conducted through Zoom and YouTube. The webinar started with the inaugural address of Rev. Dr. K.A. Maria Arokiaraj, Additional Principal. Session-1 of the national webinar was addressed by Dr. S. Gurusamy, Professor and Head, Department of Commerce, University of Madras, Chennai on the topic of “Issues and Implications of Covid-19 on the Banking Sector”. He explained the issues of banks on the aspects of Non-Performing Assets and Realization of Loans. Dr. P. Natarajan, Professor of Commerce from Pondicherry University had taken over the second Session of the Webinar and spoke about “Navigating NBFCs during Post Covid-19 Disaster”. The National Webinar on IICBFS had attracted 570 live participants and more than 2000 viewers in YouTube.

The “Relationship Management” was organized by the Department of B.Com (CA) on 24th February 2021. Ms. Latha Munusamy, Department of Counselling Psychology, Sacred Heart College (Autonomous), Tirupattur, addressed on “Awareness on Boy and Girl relationship”, stress related problems and how to heal childhood wounds and offered tips to strengthen themselves psychologically.

The “Global Money Week” was organized by the Department of B.Com (CA) on 23rd March 2021 in Google Meet. Mr. C. Hari Selvam, District Resource Person, SEBI, Krishnagiri was the resource person. He covered the area of Investment awareness on Stock market, Forex, new central government pension scheme, girl child saving scheme, entrepreneur’s financial support and loan availability.

Groups and Movements (Shift-I)

All India Catholic University Federation (AICUF)

AICUF orientation / animation was organized on 05-08-2020 through Google Meet. The students were introduced to AICUF by the President of the Association, Dr. F. Julian Xercies Rigley.

On 10-08-2020, the office bearers were elected by the president of the association through Google Meet. E. Anandhan from II B.Sc., Chemistry was elected as Secretary of the association. Immaculate, from II B.Sc., Physics was elected as Joint Secretary of the Association.

On 20-08-2020, NSS organized an orientation for the students to explain the roles and responsibilities of each Group and movement. Dr. M. Antony Arockiasamy, the Coordinator of NSS briefed the students through Google Meet.

On 15-09-2020, A Webinar on National Education Policy was organized and Dr. K. Parthibaraja, Assistant Professor, Department of Tamil was the resource person. More than two hundred students participated in the webinar. The webinar was highly informative, highlighting the negative impacts of NEP-2020.

On 16-09-2020, Loyola College AICUF organized a webinar on “Kalviyum Samathuvamum”, Mr. K. Samuvelraj, State Secretary of the Association for the Untouchables, was the resource person. The students of AICUF participated in the webinar and benefitted from the talk.

A National Poetry Competition was conducted on the theme “Humanity in Lockdown” from 27-09-2020 to 31-09-2020. The competition was open to all and was conducted through Google Forms. Certificates were given for the best poems.

The Tamil Nadu AICUF Eco Wing organized a webinar on the topic “Environment Impact Assessment (EIA)” Karthick Gunasekar, Member of Tamil Nadu Eco Wing, was the resource person. Students from AICUF participated in the webinar and benefitted.

Mrs. D. Lavanya, Counselling Psychologist and Psychotherapist, “Ookam Foundation”, addressed the AICUF students on 10-10-2020 through a webinar on the topic, “World Mental Health Day: A Talk on “No Health without Mental Health”

On 28-11-2020, a debate was organized on the topic “Offline Classes Vs Online Classes”. Dr. G. Mohan Gandhi was the Resource person. Certificates were given to all the participants.

On 01-03-2021 former AICUF member, Surya, III B.Sc., Physics, addressed and motivated the AICUF students to be more involved and become responsible youths to uplift our society.

On 15-03-2021 a speech competition was organized. Dr. A. Prabhu, Assistant Professor, Department of Tamil, was the Judge. Students were allowed to speak on topics related to Society, Education, Media and Politics.

ECO Club

An induction meeting for the students about Eco Club was conducted online on 19th August 2020 at 06:00 p.m. through Zoom platform.

A lecture on ‘Waste Plastics Utilization for Students’ was organized on 03th September 2020 at 5.30 p.m. through Zoom Platform by Dr. R. Jude Vimal Michael, Assistant Professor, Department of Chemistry. The students grew various medicinal plants in the waste plastics and took pictures and short videos and presented the same through college online portal. A special lecture on creating herbal garden and its uses were presented on 27th August 2020 at 05:00 p.m. online by Dr. R. Jude Vimal Micheal, Assistant Professor, Department of Chemistry and created awareness for the same through Zoom Platform. Seed Ball making workshop: The annual feature of making seed ball was presented online and students made it from home and gave a report of the same thorough the college portal created for the same. A Special lecture on “Organ Donation” was organized in collaboration with RRC on 1st February 2021 (4:30 p.m. to 5:30 p.m.) through online platform by Mr. T.S. Siva Shankar, Marketing Coordinator and Helpline Executive, Multi Organ Harvest and Aid Network, Mohan foundation.

An invited talk about the Benefits of our Traditional Siddha Medicinal System was given by Dr. Vaishanvi, BSMS, on 03rd March 2021 at Mother Teresa Hall from 2.00 p.m. to 3.00 p.m.

A special invited talk on “Insects and Ecosystem” in Collaboration with Department of Chemistry Association delivered by Mr. Sadasivam, Renowned Environmentalist & Tamil Writer on 10th March 2021 from 2.00 p.m. to 3.00 p.m.

The Students online presentation about Ecosystem Balance was held on 22nd March 2021 from 2.00 p.m. to 3.00 pm.

Fine Arts

A session on Group Dynamics was organized for the students of fine arts on 15th September, 2020 at 6.00 p.m. The primary purpose of the session was to get to know each other and to form the students as a dynamic group. Dr. D. Ajay coordinated the session.

A webinar on “NEP-2020” was organized on 17th September, 2020 to make students aware of the New Education Policy. Mr. Santhoshkumar, Research Scholar and an activist, Loyola College, Chennai was the resource person. The session started at 6.00pm with the introduction of resource person by Dr. D. Ajay. 12 students participated in the session and had a wonderful interaction with the resource person.

Fine Arts organized “Training on Photoshop” for the students on 10th October 2020 at 6.00 p.m. The programme was organized by Dr. D. Ajay and was coordinated by Dr. M. Vincent Sahayaraj, Assistant Professor, Department of Economics and Mr. Chellamani, Research

Scholar, Department of Mathematics was the resource person. Fifteen students participated and they tasted a new flavour on their young innovative path.

The Cultural Day, “Heart Beat 2021” was organized and celebrated by the Fine Arts on 31st January 2021. There were offstage events and onstage events. The event was presided by Rev. Dr. John Alexander SDB, Rector and Secretary and Felicited by Rev. Dr. D. Maria Antony Raj SDB, Principal. Various events were conducted, the students participated and exhibited their tremendous talents.

On 5th and 6th February 2021 the Autonomy Review Committee visited the college. To showcase the tradition and values of the college, the cultural programmes were arranged by the Association. The stall by Fine Arts also was exhibited before the Review Committee about the activities done by the Association for the past five years.

The inauguration of the regular classes was conducted on 08th February 2021 which was coordinated by Fine Arts.

Media and Consumer Forum

Ms. M.A. Alpha Hasseliin, Secretary was elected as office bearers of Media and Consumer Forum for the academic year 2020-21. Volunteers of Media and Consumer forum were welcomed and animated in September 2020. The resource persons for this academic year were Dr. P. Balasumramanian, UG & PG Head, Department of Tamil Shift-II, Mr. G. Lawrence, Assistant Professor, Department of Management Studies, Dr. C. R. Cristi Anandan, Assistant Professor, Department of Social Work, Dr. V. Collins Arun Prakesh, Assistant Professor, Department of Chemistry, Dr. S.A. Martin Britto Dhas, Assistant Professor, Department of Physics and Dr. Preetham Balakrishnan,. All the above mentioned resource persons addressed the students on various segment through the virtual platform (G-Meet).

Students had organised the various events such as debates, group discussion etc. On 30th January, 2021 Dr. A. Prabhu, Assistant Professor, Department of Tamil emphasised the importance of Geographical Indications in IPR and Dr. S. A. Martin Britto Dhas, the Nodal Officer, IPR Cell of SHC unit, highlighted on how to file the GI and other service under IPR Cell in SHC. The students performed active role in recording the short films on social issues and they were presented in the first week of February 2020.

On 13th February 2021 “Motor Bike Rally to moot awareness on Road Safety” was organized in collaboration with District Superintendent of Police, Tirupattur, NSS, SHC and Lions Club. Students took an active participation in both virtual platforms as well as in the Motor Bike Rally on Road Safety.

Matru Nadaga Iyakkam (MNI)

Matru Nadaga Iyakkam (MNI) organized the programme titled “Drama: An Introduction” for the academic year 2020-2021 through online on 24th October 2020. The special guest of this event was Mr. Chandramohan, Red Elephant Theatre Group, National School Drama, Tiripura. MNI had conducted 2nd online meetings 21st January 2021 to invite the students to participate in the Cultural Programme and Exhibition for Autonomy Review.

“Instrumental Workshop on Thudumbu” was organized by Alternative Theatre Movement (MNI) on 26th January 2021 and 28th January 2021 from 10.00 a.m. to 5.00 p.m. Thudumbu rhythm practice session (workshop) was held from 2nd February 2021 to 4th February 2021 in the afternoon (02.00 p.m. to 5.00 p.m.). On all these rhythm days the MNI students had been trained by Mr. K. Rajasekar, PG Teacher and Trainer on Thudumbu beat. The MNI students had been performed the rhythm of Thudumbu during the Autonomy review meet on 05th February 2021.

Dr. K. Parthibaraja acted as coordinator and Trainer of MoU programme on “International Workshop on Personality Development through Theatre” jointly organized by Government Girls College (Autonomous), Kumbakonam and Sacred Heart College (Autonomous), Tirupattur from 18-02-2021 to 20-02-2021.

National Service Scheme (NSS)

NSS Programme Officers and NSS Volunteers (19 Volunteers) of Sacred Heart College, Tirupattur, volunteered themselves to be Covid-19 warriors in association with Tirupattur District Police in various duties related to prevention and containment of Covid-19 and enforcement of lockdown in Tirupattur District for 48 days (02.05.2020 to 18.06.2020).

The NSS Volunteers worked along with Tirupattur District Police in ensuring social distancing norms in public places like markets, shops, banks, check posts, ration shops, etc. They also helped the Police Personnel in strictly enforcing the rule of wearing face masks in public places during the lockdown period. The NSS Volunteers assisted in Taluk Police Station in Tirupattur.

In a special function organized at GDP Hall in Tirupattur Collector Office, on 16th July 2020, Mr. M.P. Sivan Arul IAS, Collector, Tirupattur District and Dr. P. Vijayakumar IPS, Superintendent of Police, Tirupattur District, appreciated the gallant efforts of the NSS Volunteers in serving the society during difficult times of Covid-19 pandemic. They distributed certificates and awards to the NSS Volunteers and Programme Officers. Working as Covid-19 warriors, helped the NSS Volunteers to understand the Public and Police Personnel. They also developed a taste for leading from front during this pandemic.

In view of observing “Road Safety Month” National Service Scheme (NSS) of Sacred Heart College, Tirupattur in association with Rathnas Lions Club of Tirupattur organized a bike rally from Sacred Heart College to housing board signal, on 13th February 2021. The rally was flagged off jointly at 10.15 a.m. by Rev. Dr. John Alexander, Rector and Secretary SHC, Rev. Dr. D. Maria Antony Raj, Principal, Mr. Thangavel, DSP, Tirupattur District and

Rathnas Lions Club members Ln. Bhuvanewari and Ln. P. R. Dhevarajan from Sacred Heart College entrance.

Wearing helmet and raising placards containing slogans (such as “wear helmet save lives”, “respect traffic rules”, “moderate speed is always good” “high speed kills”) of road safety, around 100 bikers from NSS and Media forum moved from Sacred Heart College very slowly passing through Tirupattur bus stand, Pudupettai road and reached housing board signal at 11.15 a.m. The students from Bharath Marshal Art Academy performed street play, mime and silambattam during the rally. Tirupattur town police escorted the rally and regulated the traffic.

The rally made a great impact on the general public of Tirupattur town, instilling awareness on road safety measures such as wearing helmet, following traffic rules, avoiding use of mobile on ride, avoiding drunken drive etc.

The event was systematically coordinated by the NSS Programme Officers Dr. M. Antony Arockiasamy, Dr. U. Ramesh, Dr. B. Seenivasan, Media Forum President Dr. A. Royal Edward Williams and Ln. Kishore.

Apart from these important activities, NSS has conducted an orientation meeting online on 20.08.2020 and an awareness lecture on NEP 2020 by Dr. K. Parthibaraja, Assistant Professor, Department of Tamil on 15.09.2020. A special debate on the theme”, Who contributed more to the society during pandemic? Women or men? was organized by Dr. G. Mohan Gandhi, Assistant Professor, Department of Tamil, online on 28.11.2020. The NSS volunteers did a marvelous job of clearing the ground in front of MSW building in preparation for theme park on 3rd March 2021. An awareness programme on Civil Service Examinations was held online by Mr. Tamil Ezhilan on 10.03.2021. Finally, NSS Special Camp certificates were distributed by Rev. Dr. John Alexander, Rector and Secretary and Rev. Dr. Praveen Peter, Vice Principal (Administration Shift-I) during a special function.

Rovers and Rangers

During the academic year 2020-21, the students had attended many programmes at local, district and national levels representing the college.

Various activities like Introduction to Rovers and Rangers, Rovering to success, Scouts prayer song and Flag song, all faith prayer for the betterment of the students were arranged. For the year 2020-2021 the unit organized election of office bearers in the month of August. The unit organized discussion and talk on the great gender divide and how to bridge the gap. The students attended district exhibition programme organized by the district collector.

Red Ribbon Club (RRC)

On 15th September, 2020 between 6.00 p.m. and 7.00 p.m. a webinar titled “New Education Policy 2020” was organized through Google Meet platform for the students of RRC. Dr. K. Parthibaraja, Assistant Professor, Department of Tamil, Sacred Heart College (Autonomous) addressed the students.

On 27th October, 2020 between 5.00 p.m. and 6.00 p.m. a webinar titled “Donate Blood! Save Life!” was organized through YouTube live for the students of RRC. Mr. N. Kesavan, Department of Neuro Chemistry, CMC Hospital, Vellore addressed the students on the necessity of blood donation.

On 30th December, 2020 between 10.00 a.m. and 11.00 a.m. a state level quiz competition was organized by Tamil Nadu State Control Society (TNSACS) for the students of RRC to promote awareness on HIV/AIDS. About 55 students actively participated and received their certificates.

On 21st January, 2021 between 4.00 p.m. and 5.00 p.m. a webinar titled ‘Social Relationship and Emotional Intelligence’ was organized through Google Meet platform for the students of RRC. Dr. C.R. Christy Anandhan, Assistant Professor, Department of Social Work, Sacred Heart College (Autonomous) addressed the students.

On 25th January, 2021 between 4.00 p.m. and 5.00 p.m. a programme titled “Getting into Zero: Ends by 2030” was organized through Google Meet platform for the students of RRC. Mr. Shankar, ART Counsellor, Government Hospital, Tirupattur addressed the students.

On 1st February, 2021 between 4.00 p.m. and 5 p.m. a webinar titled “Organ Donation and Its Importance” was organized through Google Meet for the students of RRC. Mr. Siva Shankar, Mohan Foundation, Chennai presided over the function.

On 10th February, 2021 between 10.00 a.m. and 5.00 p.m. a training session titled ‘Celebrating Life’ was organized by Red Ribbon Club, Tiruvalluvar University, Vellore for the student volunteers and programme officers of RRC in the university premises. Mr. V. Madhan Kumar, RRC Programme Coordinator, Gokul Raja, II BA English (Shift-I) and Balu, II B.A History (Shift-II) attended the programme.

On 1st March, 2021 between 2.00 p.m. to 3.00 p.m. a lecture on ‘Medicinal Plants’ was organized for the students of RRC. Dr. Vaishnavi, BHMS, Siddha Practitioner addressed the students.

On 2nd March, 2021 a blood donation camp was organized in the college campus. It was jointly organized by RRC, Alumni Association, Sacred Heart College, Lions Club and Vizhuthugal Blood Donation Organization, Tirupattur. About 60 students donated blood and received their certificates.

On 10th March, 2021 a motivational talk on civil service exam preparation was organized between 2.00 p.m. and 3.00 p.m. Mr. Tamizh Iniyan, Director, I am an IAS Academy, Chennai addressed the students.

Youth Red Cross (YRC)

An “Orientation Programme” on “Youth Red Cross” was organized on 07th August 2020 through Google meet from 2.00 p.m. to 3.00 p.m. All the YRC students participated in the live programme. YRC President Dr. R. Kurinji Malar, Assistant Professor, Department of Economics, enlightened the students on the history of YRC and its location, main objectives and core principles of YRC.

An E-QUIZ was conducted on “Youth Red Cross 2020” through Google Form between 01st September 2020 to 06th September 2020. Participants belonging to various colleges also eagerly participated in the Quiz and grabbed their certificates.

An Invited Talk on “Importance of Blood Donation” was organized on 31st October 2020 through Google meet from 4.30 p.m. to 5.30 p.m. All the YRC students of Shift-I participated in the live programme. YRC President Dr. R. Kurinji Malar, Assistant Professor, Department of Economics introduced the resource person, Dr. A. Jayaprakash, Assistant Professor, Department of Biochemistry, Sacred Heart College (Autonomous), Tirupattur. Resource person in his talk elaborated on the features of blood and insisted on the importance of blood donation. An awareness programme on “Road Safety” in the view of Road Safety Awareness Week (11th January 2021 to 18th January 2021) was organized in the collaboration with Tirupattur District Police on 21st January 2021. Rev. Dr. D. Maria Antony Raj SDB, the Principal of the Sacred Heart College inaugurated the awareness programme. Mrs. Baby, Inspector of Tirupattur, delivered the chief guest address and elaborated on the safety rules to be followed while driving and gave awareness about the road safety guidelines. Public were honored with mementoes for wearing helmets and seat belts. YRC students actively participated in the awareness programme and it was a great success.

An “Invited Talk on “Power of Personal Change” was organized on 25th February 2021 through Google meet from 3.00 p.m. to 4.00 p.m. YRC President Dr. R. Kurinji Malar, Assistant Professor, Department of Economics introduced the Resource Person, Dr. F. Andrea Mary, Senior Lecturer, Department of Human Genetics, Sri Ramachandra Institute of Higher Education and Research, Chennai. Resource person in her talk elaborated on the principles and motivating factors needed for the youth. She also shed some light on the possible ways to achieve one’s own dream by changing their attitude. An awareness Programme on “Water Conservation” in view of World Water Day was organized on 22.03.2021. Posters depicting the awareness to conserve water resources were displayed in the college campus. YRC students eagerly participated in the programme.

National Cadet Corps (Shift - I & II)

1. Covid 19 Duty

The College NCC Officer along with 52 NCC Cadets and 2 Army Staff had carried out Covid-19 duties in and around Tirupattur coordinating with Police Department and District Administration, Tirupattur. They had done various social service activities such as:

- a. Controlling traffic along with Police
- b. Crowded control in public places i.e., bus stand, market, banks, etc.
- c. Advising people to wear mask
- d. Assisting check post duty along with Police
- e. Doing call centre job in Police Superintendent Office, Tirupattur.
- f. More than 6 Police check posts in Bus Stand, CK Ashram, Collector Office, Housing Board, Asiriyar Nagar and Lake Bank were manned by the cadets. The NCC Cadets had worked Shift wise with the maximum of 8 hours.
- g. From 02nd May 2020 to 16th June 2020 for about 45 Days our college NCC Cadets and NCC Officer had performed Covid-19 duties without expecting any benefit from Government.

2. Selection of First Year Students for NCC

The newly admitted first year students were selected for the college NCC unit by NCC selection team on 5th August 2020. Around 70 boys and 30 girls had been selected with appropriate army selection process with the help of PI Staff. They were distributed NCC uniforms and other necessary training items.

3. Felicitation Programme

A felicitation programme was organized on 15th July 2020 by District Administration and Police Department under the leadership of District Collector, Superintendent of Police and Commanding Officer from 12 Battalion, Salem. For all Covid-19 warriors Appreciation Certificates and Mementoes were given.

4. Independence Day Celebration

It was celebrated on 15th August, 2020 in Sacred Heart College play ground with minimum number of college adhering to the Standard Operating Procedure [SOP] given by the Government. The programme started around 08: 30 a.m. with Tamil Thai Vazhthu. Rev. Dr. John Alexander SDB, Rector and Secretary, Sacred Heart College, Tirupattur had been the chief guest and hoisted the National Flag and Rev. Dr. D. Maria Antony Raj, SDB, Principal, Sacred Heart College and Rev. Dr. K.A. Maria Arokiaraj, SDB, Additional Principal, Sacred

Heart College accepted Guard of Honor and contingent drill performed by NCC Senior Division and Senior Wing cadets. Rev. Dr. John Alexander, SDB, delivered Independence Day special message. The programme came to an end with National Anthem.

5. Blood Donation Camp

The NCC unit of Sacred Heart College, Government Hospital in Tirupattur and Vizhuthugal Blood Donor Group, Tirupattur jointly organized a blood donation Camp on 10th December 2020. Dr. C. Kumaravel, MBBS, Blood Bank Officer, Government Hospital, Tirupattur and Rev. Dr. D. Maria Antony Raj SDB, Principal, Sacred Heart College, Tirupattur were the Chief guests. Around 50 NCC Cadets including Boys and Girls donated blood. Lt. Dr. K. Sivakumar, NCC Officer and Dr. J. Merlin Florence, NCC Care – Taker had organized the entire programme. At the end of the programme appreciation certificates were given to all the donors.

6. Republic Day Celebration 2021

It was celebrated on 26th January 2021 at Sacred Heart College in the playground. The programme started at 08:30 a.m. with Tamil Thai Vazhthu. Rev. Dr. K. A. Maria Arokiaraj SDB, Additional Principal, Sacred Heart College was the chief guest and accepted Guard of Honor followed by contingent drill performed by NCC Senior Division and Senior Wing cadets, then he delivered Republic Day special message. The programme was presided over by Rev. Dr. John Alexander SDB, Rector and Secretary, Sacred Heart College, and Rev. Dr. D. Maria Antony Raj SDB, Principal, Sacred Heart College, Tirupattur. The programme ended with National Anthem.

7. Autonomy Review Committee Visit

The Autonomy Review Committee from New Delhi had visited and reviewed the Autonomy Status of Sacred Heart College, Tirupattur on 05th February 2021 and 06th February 2021. In view of the above event NCC Unit of our college had given Guard of Honour to the Chief Guest and the Members of the Team. As a part of the event, NCC Stall was also made by the cadets in which the documents, photos, chart related to NCC and achievement lists of NCC Cadets were displayed.

8. Online Classes

Due to Covid 19 Pandemic based on the direction given by the NCC Directorate, 12 TN BN NCC, Salem had organized many programmes such as online classes, webinars and quiz for the NCC Cadets through online mode during the academic year 2020 – 2021. 2nd and 3rd year NCC Cadets had successfully completed 15 official online theory classes through online mode.

9. Regular Parades

20 regular unofficial parades were conducted by Lieutenant Dr. K. Sivakumar, NCC Officer, with the assistance of Dr. J. Merlin Florence, NCC Care taker, along with unit Army staff.

10. NCC “B” Certificate Examination 2021

The 2nd Year NCC SD and SW cadets of SHC had attended NCC “B” Certificate examinations on 06th March 2021 & 07th March 2021, which were held in Sona College of Technology, Salem. 10 SD and 10 SW NCC Cadets had attended and successfully completed their B Certificate Examination.

11. NCC “C” Certificate Examinations 2021

The 3rd Year 14 SD and 08 SW NCC Cadets of SHC attended NCC “C” Certificate examinations on 27th March 2021 and 28th March 2021 held in Sona College of Technology, Salem.

Department of Physical Education

National Level:

S. Chandru - II B.Com (AU190160) represented Tamil Nadu Athletic Cross Country Race team in the 55th National Cross Country Championships 2021 held at Chandigarh on 21st February 2021.

Groups & Movements (Shift-II)

All India Catholic University Federation (AICUF)

During the month of the August students were connected virtually and animated on Who is an AICUFer? And their roles and responsibilities.

On 15-09-2020 a webinar was organized on “New Education Policy 2020” delivered by Dr. K. Parthibaraja, Assistant Professor, Department of Tamil, Sacred Heart College (Autonomous) As a preparation to celebrate world mental health day on 07-10-2020 at 12 p.m. we met virtually and planned the programme schedule.

On 10-10-2020, a webinar was organized on the topic “No Health without Mental Health” by D. Lavanya, Counselling Psychologist. She delivered a lecture on various topics related to the mental health. Every AICUF student of Sacred Heart College participated in the webinar and found it useful. On 14-10-2020 the AICUF students from the department of Mathematics organized an online lecture on the “Merits and Demerits of Online Class”. And it was a very interactive session and students discussed on issues they are facing.

On 21-10-2020 the AICUF students from the Department of English organized an online lecture on “Women Harassment and Protection”. The programme was successful in bringing about the awareness on the importance of women empowerment in the society. On 21-01-2021 a webinar was organized, Dr. C.R. Christy Anandan, Assistant Professor, Department of Social Work, Sacred Heart College delivered a lecture titled “Social Relationship and Emotional Intelligence”.

On 03-02-2021 an awareness programme on “The Merits and Demerits of Farm Bill 2020” was organized and the eye opener talk was given by the AICUFer Mr. Suriya. He dwelt with many issues on farm bills which ignited in the student minds. Along with this programme students attended many online events organized by the AICUF unit of various colleges across the country. Finally, AICUF students prepared the posters for annual retreat and they posted the charts in our campus.

ECO CLUB

Selection of office bearers and planning the Annual Activities

The induction meeting using zoom meet started at 2.00 p.m. on 11th August 2020 with a prayer song. After the short introduction about ECO CLUB, the office bearers of the club had been selected and the annual plan of the club was prepared.

Home Gardening during Pandemic Period

A meeting using zoom was conducted on 23rd August 2020 to impart the need and importance of home gardening during this pandemic period. After having a short discussion, it was finalized and accepted to plant a small herbal garden using waste water bottles and cans at homes with at least 5 plants. The photos of the garden were shared in the ECO Club – Moodle link.

Assignment on Budget Allocation and Schemes Introduced in 2020 Budget for Agriculture

On 8th September 2020, the ECO CLUB students were instructed to prepare an assignment on “Budget Allocation and Schemes introduced in 2020 Budget for Agriculture” and directed to upload it in the moodle.

Webinar on “Life with Nature”

The webinar entitled “Life with Nature” using Google Meet was organized on 7th November 2020. Dr. P. Balasubiramanian, Head, Department of Tamil (Shift-II) was the resource person. He shared about the early life style of Tamil people with nature and scientist who are contributing to retain the old plants, research centers and reference books available to lead a healthy life with nature.

Assignment on “New Laws for Agriculture and its Views”

The students were instructed to refer website, media and prepare a document about new laws for agriculture and its views. The same was instructed to upload in the moodle.

Webinar on “How to Save our Eco System”

The Eco Club organized a lecture on “How to Save our Eco System” and “New Laws on Agriculture” on 3rd March 2021. The resource person Mrs. Latha Murugan, Agriculture Officer, Vellore Region addressed the students’ on the importance of Eco system and highlighted the possibilities and easy ways to keep our environment clean, unpolluted and thereby saving our eco system.

Fine Arts

Online Webinar on Madhubani

On 31-07-2020 Fine Arts students attended a Webinar on Madhubani” organized by EIT Polytechnic College, Kavindapadi, Erode. The resource person for the Webinar is Mrs. S. Mahalakshmi, Training and Placement Officer, EIT Polytechnic College, Kavindapadi, Erode taught the meaning, basic requirement for drawing, drawing tools, knowledge on colouring, and finally she concluded with drawing a picture.

Invited Talk on the Role of Fine Arts

On 13-09-2020 an invited talk on the “Role of Fine Arts” was organized at 09.00 a.m. through Google Meet. Resource person for the talk was Dr. B. Govindan, Assistant Professor, Department of Mathematics Shift-II, Sacred Heart College (Autonomous) Tirupattur. He explained roles and functions of Fine Arts Groups and Movement. He dwelt on the importance, scope and benefits of being members of Fine Arts.

Digital Media used for Fine Arts

On 17-09-2020 a Webinar on “Digital Media” was organized for Fine Arts students. The resource persons for the Webinar were Mr. S. John Bosco, Assistant Professor, Department of Computer Science (PG), Sacred Heart College (Autonomous), Tirupattur. He talked about the importance and benefits of using software for Fine Arts. He taught Photoshop software to make banners, invitations and certificates.

Webinar on “No Health without Mental Health”

On 10-10-2020 a Webinar on “No Health without Mental Health” was conducted through Google Meet. The resource persons for the webinar were Miss. Grish A L and Miss. Aishvarya Kumari. The meaning of mental health and importance of being mentally healthy was discussed. They also discussed the benefits of being mentally healthy and they gave examples of people those who made a gritty come back from mental illness.

Heart Beat 2021

On 31-01-2020 the Fine Arts of Shift-I & II jointly organized Heart Beat 2021. We conducted thirteen (13) offline events prior to 31.01.2020 and distributed 1st, 2nd and 3rd prizes for each event. Chief Guest for the Heart Beat was Rev. Dr. John Alexander, SDB, Secretary and Rector of Sacred Heart College (Autonomous) Tirupattur and guests of Honour were Rev. Fr. K.J. Louis, SDB Don Bosco, Pannur and Rev. Fr. Y. F. Balasamy, SDB, Don Bosco, Fujairah, UAE. Chief Guest address was given by Rev. Dr. John Alexander, SDB and felicitation address was given by Rev. Dr. K. A. Maria Arokiaraj, SDB Additional Principal, Sacred Heart College (Autonomous). Winners of the events were given shield, certificates and cash awards. The overall championship for boys and girls was won by the Department of English (Shift-II).

Cultural for Autonomy Review

On 05-02-2020 the Fine Arts of Shift-I & II jointly organized a cultural programme for the Autonomy Extension Review Committee at 5.00 p.m. in Kamarajar Arangam. The college exhibited its extracurricular profile by presenting a variegated cultural programme before the committee. Dr. N.C. Gautham delivered the chief guest talk.

Women’s Day Celebration

On 08-03-2021 the Fine Arts contributed to celebrate “World Women’s Day”. Chief guests for the programme were Deputy Superintendent of Police Miss. Rani from Thirupattur and Dr. Sumathi and Miss. Latha Munuswamy, the Counsellors. Felicitation address was given by Dr. K. A. Maria Arokiaraj, SDB Additional Principal, Sacred Heart College (Autonomous) Tirupattur. Students interacted with the chief guests and college counsellors over various problems in the society related to women.

Media Forum

“Inauguration of Media Forum” was organized by Media Forum Group on 21st August 2020. President of Media Forum Club, Mr.T. Prabakaran, Assistant Professor, Department of Computer Applications inaugurated and briefed the objectives and annual plan of the academic year.

A two-day National Webinar on “Dissemination of Information on New Education Policy 2020” was conducted by Non Academic Associations – Seethalakshmi Ramaswamy College (Autonomous), Trichy from 22/09/2020 to 23/09/2020.

“Introduction to Media and Social Media” was organized by Media Forum Group on 1st October 2020.

On World Mental Health Day an Awareness Webinar on “No Health without Mental Health” was organized by OOKKAM Foundation (Mental Health and Well-Being Service) in collaboration with Media Forum Club on 10th October 2020.

A Two Day National Webinar on “Scope and Challenges of Women Migrant Workers – Post Covid-19 Pandemic” was organized by PG & Research Department of Social Work, Sacred Heart College (Autonomous) on 27th & 28th January 2021.

Animation on Media was organized by Media Forum Association (Shift-II), Sacred Heart College (Autonomous), on 10th March 2021.

Web Content Editing was organized by Media Forum Association (Shift-II), Sacred Heart College (Autonomous) on 17th & 24th March 2021.

National Service Scheme (NSS)

On 31st August 2020 an orientation programme was conducted through Google Meet for the NSS volunteers. The NSS Programme Officer Mr. B. Seenivasan welcomed the gathering and talked about the importance of NSS, its History, Motto, Logo, Activities and awards in NSS.

The members of Unit-4 of National Service Scheme participated in an Online Quiz on “Remembering India’s Freedom Movement” which was organized by PSGR Krishnammal College for Women, Coimbatore over Google Forms on 15th August, 2020.

The members of Unit-4 of National Service Scheme participated in “Webinar on Education Policy – 2020; The Challenges and Prospects” on 17.08.2020 at 11.00 a.m. to 12.30 p.m. It was organized by the Internal Quality Assurance Cell (IQAC) of Acharya Institute of Graduate Studies, Bangalore. The resource persons of the event were Dr. Leena Chandra Wadia, Chief Consultant, Technical Secretariat & Member, Drafting Committee – NEP; and Dr. S. Muralidhar, Member, Sub-Committee, Task force of Implementation of NEP in Karnataka.

The members of NSS (Unit-4) participated in a National Webinar on “Self Transformation through Meditation & Human Energy Centre – Kundalini Yoga” which was held on 22nd and 23rd of August 2020 through freeconferencecall.com. The event was organized by Tamil Nadu Teachers Education University, Chennai and the resource person of the event was Dr. K. Venkatachalapathy, Director i/c, Centre for Yoga Studies, Annamalai University.

The members of NSS (Unit-4) participated in a “One Week Online Student Development Programme on Enhancement and Enrichment of Soft Skills in Students” from 25th August 2020 and 31st August 2020 through freeconferencecall.com. The event was organized by Sreenidhi Institute of Science and Technology, SNIST, Hyderabad.

The members of NSS (Unit-4) participated in a Webinar on “Campus Startups and Its Politics” on 04th September, 2020 through Google Meet. The event was organized by VLB Janakiammal College of Arts and Science (Autonomous), Coimbatore. The resource person of the event was Mr. Rajasekaran, NEN Faculty, PSG College of Arts and Science, Coimbatore.

The members of Unit-4 of National Service Scheme participated in Teachers Day Celebration on 05th September, 2020 in digital mode. NSS members prepared a digital post of their favourite teacher or quote on teacher’s day with their selfie. They were posted in the following hashtag: #Our Teachers Our Heros.

National Service Scheme (Unit 4) organized and celebrated the International Peace Day on 21st September, 2020 in digital mode. NSS members prepared a chart on International Peace day, importance of peace and slogans against terrorism and violence against women.

Unit-4 had organized and celebrated the NSS Day on 24th September, 2020 in digital mode. The volunteers celebrated the NSS Day by keeping the NSS DAY Logo in their Whatsapp status in order to publicize the NSS Day and its valuable services to the nation.

The members of NSS (Unit-4) had participated in NSS Awards Ceremony on 24th September, 2020 at 10.30 am at webcast.gov.in/myas/nssawards/. India’s President Shri Ram Nath Kovind has distributed the awards to NSS volunteers.

Unit-4 of National Service Scheme had celebrated the World Mental Health Day along with OoKkam Foundation (Mental Health and Well Being Service), Kolathur, Chennai on 10th October, 2020 at 12.00 p.m. to 1.00 p.m. via Google Meet. World Mental Health Day Awareness Webinar on the Topic of “No Health without Mental Health” was conducted by the Resource Person of Mr. Alex Shyam Chelladurai, Chief Coordinator, Mani Mary Foundation.

The members of Unit-4 of National Service Scheme participated in the National Webinar on “Politics and Religion: Reflection on Gandhi's Moral Political Philosophy” on 03rd October 2020. It was organized by the Indian Academy Degree College Bangalore. The resource person of the event was Prof. Rajaram Tolpadi, Director i/c, Nehru Study Centre, Mangalore University.

Members of NSS (Unit-4) participated in an online awareness programme on “Access to e-Resources under N-List” on 24th November, 2020.

National Youth Festival 2021 at district level was organized by the National Service Scheme of our college including Unit-4 on 29th and 30th December 2020 in Carreno Hall. Students from various institutions participated in 11 individual and 7 group events.

NSS members attended an online programme on “Rights under Indian Constitution” on 05th January, 2021. It was organized by RAMCO Institute of Technology, Rajapalayam with the resource person of Dr. Vijay Karthik, Assistant Professor, Dr. Ambedkar Government Law College, Chennai. Around 30 NSS members participated and benefited with the e-certificate.

An online quiz on “Traffic Rules and Penalties for Violation of Traffic Rules” was organized by NSS (Unit-4) on 23rd January, 2021. Every NSS member prepared 5 multiple choice questions on traffic rules and penalties.

Members of NSS Unit-4 participated in a webinar on “Illness to Wellness – Myths and Facts of Corona Virus Vaccination” on 28th January, 2021.

National Service Scheme organized “Motor Bike Awareness Rally on Road Safety” on 13th February, 2021 in association with Ratnas Lions Club. The Rector and Principal of Sacred Heart College, Tirupattur and DSP of Tirupattur District flagged off the rally from Sacred Heart College, Tirupattur.

Members of NSS Unit-4 participated in an online webinar on “Politics of the Family: Women Family and Gender Relations” on 27th February, 2021 at 7.00 pm. The event was organized by Social Science Forum, Payyanur College, Payyanur. This session was addressed by Dr. Gayathri, Assistant Professor, PG Department of Political Science, Government College, Madappally.

National Service Scheme (Unit-4) had organized an awareness programme on “Social issues and Covid-19 Safety Measures” on 11th March, 2021. NSS Programme Officer Dr. B. Seenivasan rendered a speech on political issues in the country, origin of Covid-19 and the importance of vaccine.

Awareness Programme on Social Issues and Election 2021 was conducted by NSS (Unit-4) on 12th March, 2021. NSS Programme Officer Dr. B. Seenivasan initiated the elocution on social issues in India. Girls and boys spoke about election issues, water issues, road issues, bribes related to election and freebies offered by political party to voters.

Red Ribbon Club

The first meeting of RRC was held on 16/08/2020. During the meeting an introduction and idea about Red Ribbon Club was shared.

The second meeting was held on 30/08/2020 at 2.00 p.m. Mrs. Kalpana, Health Department, Tirupattur District, Mrs.. Kalpana, Health Department, Tirupattur spoke on HIV/ AIDS.

The third meeting was held on 10/10/2020 at 12.00 noon through Google Meet. Miss. Cavery Babu, Physiologist, from Ookam Foundation, addressed the students on World Mental Health Day.

After the lockdown the RRC students were present in the college Mr. V. Madhankumar, Assistant Professor, Department of English (Shift-I) spoke on AIDS & HIV and the blood groups on 02/02/2021.

Sacred Heart College Alumni Association, Red Ribbon Club of Sacred Heart College, Lions Club of Tirupattur and Vizhuthugal Blood Donation Organization jointly organized a blood donation camp on 02/03/2021. Nearly 70, members (both boys and girls) donated blood.

Youth Red Cross

“Awareness on Role of Youth in Society”

The programme started at 12.00 p.m. through Google Meet on 3rd September 2020. Welcome speech was given by Mr. V. Anbarasan, felicitation by Mr. L. Anandaraj, Assistant Professor, Department of Physics & YRC President, resource person Mr. R. Sankaran, Assistant Professor, Department of Economics, Sacred Heart College (Autonomous), Tirupattur. He shared many useful information to the YRC students, with a wonderful speech & useful presentation, on the following areas: brief history of the red cross, origin, mission, emblem, organization, core values, programmes and activities, disaster response, health and care in communities, volunteer, encourage respect for others, willingness to work together to find solutions for problems, importance of hospital service, importance of blood donation, social work and importance of organ donation.

“Stress Management and Suicide Prevention”

An invited talk on “Stress Management and Suicide Prevention” was organized on 13th September 2020. Mr. Thilak, Counselling Psychology and Psychotherapist, Co-ordinator of Ookam Foundation, Chennai was the resource person. He spoke on the issue of suicide and the need to prevent it.

Awareness on World Mental Health was created on 10th October 2020

Mr. A. Thatchinamoorthi, Counselling Psychologist and Psychotherapist was the resource person, He spoke on how to keep up our mental and physical health and three steps to enhance mental health.

மாற்று நாடக இயக்கம்

20.08.2020 அன்று நடைபெற்ற மாற்று நாடக இயக்க உறுப்பினர்கள் கூட்டத்தில் மன்ற உறுப்பினர்கள் கலந்து கொண்டனர். அக்கூட்டத்தில் மன்றத்தின் செயலர் மற்றும் துணைச்செயலர் அறிமுகம் நடைபெற்றது. மாற்று நாடக இயக்க உறுப்பினர்களின் இவ்வாண்டிற்கான ஆண்டுத்திட்டம் பற்றியும் அடுத்து நடத்தும் கூட்டம் பற்றியும் விவாதிக்கப்பட்டன. இணையவழி மூலம் நடந்த இந்தச் சந்திப்பில் மன்ற உறுப்பினர்கள் கலந்து கொண்டனர். இந்நிகழ்வை முனைவர் ஆ. முத்தையன் ஒருங்கிணைப்புச் செய்தார்.

30.08.2020 அன்று இணையவழியாக மாற்று நாடக இயக்க உறுப்பினர்கள் கூட்டம் நடைபெற்றது. அக்கூட்டத்தில் இணையவழிக் கல்வியால் நன்மையே, இணையவழிக் கல்வியால் சிக்கல்களே எனும் தலைப்பிலான பட்டிமண்டபம் நடைபெற்றது. மன்ற உறுப்பினர்கள் கலந்துகொண்டனர். இந்நிகழ்வை முனைவர் ஆ. முத்தையன் ஒருங்கிணைப்புச் செய்தார்.

19.09.2020 அன்று இணையவழியாக மாற்று நாடக இயக்க உறுப்பினர்கள் கூட்டம் நடைபெற்றது. அக்கூட்டத்தில் பாடல் மன்றம் நடைபெற்றது. மன்ற உறுப்பினர்கள் கலந்துகொண்டனர். இந்நிகழ்வை முனைவர் ஆ. முத்தையன் ஒருங்கிணைப்புச் செய்தார்.

29.09.2020 அன்று இணையவழியாக மாற்று நாடக இயக்க உறுப்பினர்கள் கூட்டம் நடைபெற்றது. அக்கூட்டத்தில் இயற்கையைப் போற்றுவோம் எனும் தலைப்பிலான பேச்சுரங்கம் நடைபெற்றது. இந்நிகழ்வில் மன்ற உறுப்பினர்கள் கலந்து கொண்டனர். இந்நிகழ்வை முனைவர் ஆ. முத்தையன் ஒருங்கிணைத்தார்.

10.10.2020 அன்று இணையவழியாக மாற்று நாடக இயக்க உறுப்பினர்கள் கூட்டம் நடைபெற்றது. அக்கூட்டத்தில் மனநலம் இல்லையேல் உடல்நலம் இல்லை எனும் தலைப்பில் விழிப்புணர்வு நிகழ்வு நடைபெற்றது. இந்நிகழ்வை இயற்பியல்துறைப் பேராசிரியர் மு. அரவிந்த் அவர்கள் ஒருங்கிணைத்தார்.

15.10.2020 அன்று இணையவழியாக மாற்று நாடக இயக்க உறுப்பினர்கள் கூட்டம் நடைபெற்றது. அக்கூட்டத்தில் தனிநபர் நகைச்சுவை மன்றமாக நடைபெற்றது. மன்ற உறுப்பினர்கள் கலந்துகொண்டனர். இந்நிகழ்வை முனைவர் ஆ. முத்தையன் ஒருங்கிணைப்புச் செய்தார்.

17.10.2020 அன்று இணையவழியாக மாற்று நாடக இயக்க உறுப்பினர்கள் கூட்டம் நடைபெற்றது. அக்கூட்டத்தில் கதைக்கூறல் நிகழ்வு நடைபெற்றது. மன்ற உறுப்பினர்கள் கலந்துகொண்டனர். இந்நிகழ்வை முனைவர் ஆ. முத்தையன் ஒருங்கிணைப்புச் செய்தார்.

24.10.2020 அன்று இணையவழியாக மாற்று நாடக இயக்க உறுப்பினர்கள் கூட்டம் நடைபெற்றது. அக்கூட்டத்தில் பெண்களை மதிப்போம் கவிதையரங்கு நிகழ்வு நடைபெற்றது. மன்ற உறுப்பினர்கள் கலந்துகொண்டனர். இந்நிகழ்வை முனைவர் ஆ. முத்தையன் ஒருங்கிணைப்புச் செய்தார்.

31.10.2020 அன்று இணையவழியாக மாற்று நாடக இயக்க உறுப்பினர்கள் கூட்டம் நடைபெற்றது. அக்கூட்டத்தில் பல்குரல் அரங்கம் நடைபெற்றது. மன்ற உறுப்பினர்கள் கலந்துகொண்டனர். இந்நிகழ்வை முனைவர் ஆ. முத்தையன் ஒருங்கிணைப்புச் செய்தார்.

05.11.2020 அன்று இணையவழியாக மாற்று நாடக இயக்க உறுப்பினர்கள் கூட்டம் நடைபெற்றது. அக்கூட்டத்தில் தொடர்பு அரங்கம் எனும் தலைப்பில் போட்டி நிகழ்வாக நடைபெற்றது. மன்ற உறுப்பினர்கள் கலந்துகொண்டனர். இந்நிகழ்வை முனைவர் ஆ. முத்தையன் ஒருங்கிணைப்புச் செய்தார்.

13.11.2020 அன்று இணையவழியாக மாற்று நாடக இயக்க உறுப்பினர்கள் கூட்டம் நடைபெற்றது. அக்கூட்டத்தில் விடுகதை அரங்கம் எனும் தலைப்பில் விடுகதைகள் பரிமாறப்பட்டது. மன்ற உறுப்பினர்கள் கலந்துகொண்டனர். இந்நிகழ்வை முனைவர் ஆ. முத்தையன் ஒருங்கிணைப்புச் செய்தார்.

05.12.2020 அன்று இணையவழியாக மாற்று நாடக இயக்க உறுப்பினர்கள் கூட்டம் நடைபெற்றது. அக்கூட்டத்தில் கதை வளர்ப்பு அரங்கம் எனும் தலைப்பில் நடைபெற்றது. மன்ற உறுப்பினர்கள் கலந்துகொண்டனர். இந்நிகழ்வை முனைவர் ஆ. முத்தையன் ஒருங்கிணைப்புச் செய்தார்.

10.03.2021 அன்று போப் பிரான்சிஸ் அரங்கத்தில் வீரமாமுனிவர் தமிழ் மன்றம் தமிழ்த்துறை நடத்திய அக்கூட்டத்தில் பூவுலகில் பூச்சிகள் எனும் தலைப்பில் கோவை சதாசிவம் அவர்கள் கலந்துரையாலில் ஈடுபட்டார். இக்கூட்டத்தில் மாற்று நாடக இயக்க மன்ற உறுப்பினர்களும் கலந்துகொண்டனர். இந்நிகழ்வை முனைவர் ஆ. முத்தையன் ஒருங்கிணைப்புச் செய்தார்.

Best Foods to Boost the Immune System

The immune system consists of organs, cells, tissues and proteins. Together, these carry out bodily processes that fight off pathogens, which are the viruses, bacteria and foreign bodies that cause infection or disease. When the immune system comes into contact with a pathogen, it triggers an immune response. The immune system releases antibodies, which are attached to antigens and the pathogens and kill them. Incorporating specific foods into the diet may strengthen a person's immune response. The following food enhances immune system.

Blueberries

Blueberries contain a type of flavonoid called anthocyanin, which has antioxidant properties that can help boost a person's immune system. A 2016 study noted that flavonoids play an essential role in the respiratory tract's immune defense system. Researchers found that people who ate foods rich in flavonoids were less likely to get an upper respiratory tract infection, or common cold, than those who did not.

Dark Chocolate

Dark chocolate contains an antioxidant called theobromine, which may help to boost the immune system by protecting the body's cells from free radicals. Free radicals are molecules that the body produces when it breaks down food or comes into contact with pollutants. Free radicals can damage the body's cells and may contribute to disease. Despite its potential benefits, dark chocolate is high in calories and saturated fat, so it is important to eat it in moderation.

Turmeric

Turmeric is a yellow spice that many people use in cooking. It is also present in some alternative medicines. Consuming turmeric may improve a person's immune response. This is due to the qualities of curcumin, a compound in turmeric. According to a 2017 review, curcumin has antioxidant and anti-inflammatory effects.

Oily Fish

Salmon, tuna, pilchards, and other oily fish are a rich source of omega-3 fatty acids. According to a 2014 report, long-term intake of omega-3 fatty acids may reduce the risk of Rheumatoid Arthritis (RA). RA is a chronic auto immune condition that occurs when the immune system mistakenly attacks a healthy part of the body.

Broccoli

Broccoli is another source of vitamin C. It also contains potent antioxidants, such as sulforaphane. For these reasons, it is a good choice of vegetable to eat regularly to support the immune system.

Sweet Potatoes

Sweet potatoes are rich in beta carotene, a type of antioxidant that gives the skin of the potatoes its orange colour. Beta carotene is a source of vitamin A. It helps to make skin healthy and may even provide some protection against skin damage from ultraviolet (UV) rays.

Spinach

Spinach may boost the immune system, as it contains many essential nutrients and antioxidants, including: flavonoids, carotenoids, vitamin C and vitamin E. Vitamins C and E can help support the immune system. Research also indicates that flavonoids may help to prevent the common cold in otherwise healthy people.

Ginger

People use ginger in a variety of dishes and desserts, as well as in teas. According to a review, ginger has anti-inflammatory and antioxidative properties and is likely to offer health benefits. However, more research is necessary to confirm whether or not it can effectively prevent illness.

Garlic

Garlic may help to prevent colds. Garlic is a common home remedy for the prevention of colds and other illness. One review looked at whether taking garlic supplements containing allicin reduced the risk of getting a cold. The group of people taking a placebo had more than double the number of colds among them than those taking the garlic supplements. However, the researchers concluded that more research is necessary to determine whether or not garlic can help to prevent colds.

Green Tea

Green tea contains only a small amount of caffeine, so people can enjoy it as an alternative to black tea or coffee. Drinking it may also strengthen the immune system. As in blueberries, green tea also contains flavonoids, which may reduce the risk of a cold.

Kefir

Kefir is a fermented drink that contains live cultures of bacteria that are beneficial for health. Initial research suggests that drinking kefir may boost the immune system. According to a 2017 review, various studies have shown that regular consumption of kefir can help with: fighting bacteria, reducing inflammation and increasing antioxidant activity. Majority of the

research support this were carried out on animals or in a laboratory. Researchers need to perform additional studies to understand how kefir may prevent disease in human.

Sunflower Seeds

Sunflower seeds can make a tasty addition to salads or breakfast bowls. They are a rich source of vitamin E, an antioxidant. In the same way as other antioxidants, vitamin E improves immune function. It does this by fighting off free radicals, which can damage cells.

Almonds

Almonds are another excellent source of vitamin E. They also contain manganese, magnesium and fiber. A small handful or a quarter of a cup of almonds is a healthy snack that may benefit the immune system.

Oranges or Kiwifruit (Kiwis)

Oranges and kiwis are an excellent source of vitamin C, which is the vitamin that many people turn to when they feel a cold developing. While scientists are still not sure exactly how it helps, vitamin C may reduce the duration of common cold symptoms and improve the function of the human immune system.

Red Bell Pepper

For people trying to avoid the sugar in fruit, red bell peppers are an excellent alternative source of vitamin C. Stir-frying and roasting both preserve the nutrient content of red bell peppers better than steaming or boiling, according to a study on cooking methods.

Dr. A. Poongothai

Assistant Professor

Department of Biochemistry

Ginger, the Immunity Booster

Biologically, Ginger is a root or rhizome of the flowering plant known as *Zingiber officinale*, which is a native to India and South East Asia. Ginger belongs to the *Zingiberaceae* family. Known for its amazing medicinal properties, ginger is used as an active ingredient in several Ayurvedic medicines. As kids we grew up to the idea that going natural is the key to good health. From Grandma's secret remedies to that classic *adrak wali chai* or to the *tulsi adrak kadha*, this miraculous ingredient is the perfect fix for most seasonal ailments like cold, cough, fever and flu.

Not only does ginger help in treating seasonal infections, it is a great remedy for improving digestion and metabolism. Apart from all, ginger is used in several Ayurvedic medicines to

improve the quality of hair and skin. And if you think that is all then, there's a lot more you need to know this about miraculous root spice. Being a root spice, ginger is loaded with nutrients such as vitamin B6 and dietary minerals like magnesium and manganese. Raw ginger has around 79% water, 18% carbohydrates, 2% protein, and 1% fat. The best way to use ginger is by adding the raw ginger to our foods and drinks.

Since ages, ginger is used for medicinal purposes, due to its rich nutritional properties. Even in several Ayurvedic medicines ginger is used as an active ingredient and this is due to the presence of Gingerol, an active component that makes ginger a perfect immunity booster. Apart from that, Ginger has anti-bacterial and anti-inflammatory properties, which help in keeping several ailments at bay and helps fighting infections.

A. Buvaneshwaran (BU180932)

III B.Sc., Biochemistry

Mint and Its Medicinal Uses

Introduction

Mentha is a genus of plants in the family *Lamiaceae*. The exact distinction between species is unclear; it is estimated that 13 to 24 species exist. Hybridization occurs naturally where some species range overlap many hybrids and cultivars.

Nutrition

A two tablespoon serving or 3.2 grams of fresh peppermint provides: 2.24 calories, 0.12g of carbohydrates, 0.03g of fat, and 0.26g of fiber. Mint also contains trace amount of: potassium, magnesium, calcium, phosphorus, vitamin C, iron and vitamin A. While mint contains several nutrients, the amount that a person would typically use in a meal is not sufficient to provide a significant amount of a person's daily requirement. Mint in the diet is most beneficial as a replacement for salty, sugary or calorific flavouring.



Fresh and Healthy Facts about Mint

Aids in Digestion

Mint is known in the world of herbal medicine as a carminative and an antispasmodic agent, due to its ability to reduce stomach cramping, indigestion, pain and discomforts. Mint is very soothing for conditions such as Irritable Bowel Syndrome (IBS), heartburn and nausea.

Antimicrobial and Anti-Fungal

Mint has the ability not only to kill the bad bacteria that are in our digestive tract, but also combats the overgrowth of fungus that is present after the intake of antibiotic, Mint is a powerful herb in the prevention and treatment of candida albicans (a common yeast infection).

Powerful Anti-Inflammatory

Many varieties of mint are traditionally consumed as anti-inflammatory for the lungs. Mint is showing to have promising effects in clinical trials of asthma treatment by extracting the active nutrient rosmarinic acid, which can block inflammation.



The Potential to Kill Cancer Cells

Mint is in the early stages of research for cancer treatments for its cytotoxic (cell killing) effect on certain types of cancer cell because of a specific phytonutrient it is called perillyl alcohol. It is also a great preventive treatment, as it is packed with antioxidants.

Relieves Common Cold and Flu Symptoms

Inhalation of the essential oil found in mint leaves has shown to clear the passages of the nose and throat and acts as a relief from the discomfort we experience during cold or flu. Mint can also be used in the recovery of a cold or flu due to its antimicrobial and the inflammatory action.

Astringent Agent

Mint leaves work well as a mild astringent agent that helps to tone one's skin naturally. It is potent to clear off the dead cells, removes the dirt from the pores and revamps the skin to a smoother, supple and well-hydrated tone. In addition, it also retains the moisture in the skin by tightening the pores.

G. Girija (BU180911)

III B.Sc., Biochemistry

Fenugreek Seeds and Uses

Fenugreek is a seed long used in alternative medicine. It's a common ingredient in Indian dishes and often taken as a supplement. This seed may have numerous health benefits.

It is a plant that stands around 2 - 3 feet (60 - 90 cm) tall, it has green leaves, small white flowers and pods that contain small golden - brown seeds. For thousands of years, fenugreek has been used in alternative and Chinese medicine to treat skin conditions and many other

diseases. Recently, it has become a common household spice and a thickening agent. It can also be found in products, such as soap, shampoo etc. Fenugreek seeds and powder are also used in many Indian dishes for its nutritional profile and slightly sweet, nutty taste.

Nutritional Facts

One table spoon (11.1 grams) of whole fenugreek seeds contain 35 calories and several nutrients such as fiber - 3 grams, protein - 3 grams, carbs- 6 grams, fat - 1 gram and Iron - 20% of daily value.

Uses of Fenugreek Seeds

1. Breast Milk Production - It is the best source of nutrition for the baby's development. However, some mothers may struggle to produce sufficient amount of with. The drugs are commonly used to boost breast milk production.

2. Medicine for Diabetes - It seems to affect both type 1 and 2 diabetes, along with increasing general carb tolerance in people without these conditions. In another study, people without diabetes took fenugreek. They experienced a 13.4% reduction in blood sugar level 4 hours after intake. These benefits may be due to fenugreeks role in improving insulin function.

3. Appetite Control - So far 3 studies have shown a reduction in fat intake and appetite. One 14 - day study found that participants spontaneously reduced total fat intake by 17%.

4. Cholesterol Level - Some evidence indicates that fenugreek can lower cholesterol and triglycerides levels.

5. Heart Burn - A two week study in people with frequent heart burn has found that fenugreek reduced their symptoms. In fact, its effects matched those of anti-acid medications.

6. Inflammation - This herb has demonstrated anti - inflammatory effects in rats and mice. More research is needed to confirm this in humans. In addition some reviews and reports from traditional medicine suggest that fenugreek can help with ulcerative colitis, skin problems and numerous other conditions.

S. Gayathri (BU180916)

III B.Sc., Biochemistry

Growth Hormone Function in Human Body

Introduction

Growth Hormone (GH), also called somatotropin or human growth hormone, peptide hormone is secreted by the anterior lobe of the pituitary gland. It stimulates the growth of essentially all tissues of the body, including bone. GH is synthesized and secreted by anterior

pituitary cells called somatotrophs, which release between one and two milligrams of the hormone each day. GH is vital for normal physical growth in children; its levels rise progressively during childhood and peak during the growth spurt that occurs in puberty.

Importance of GH hormone

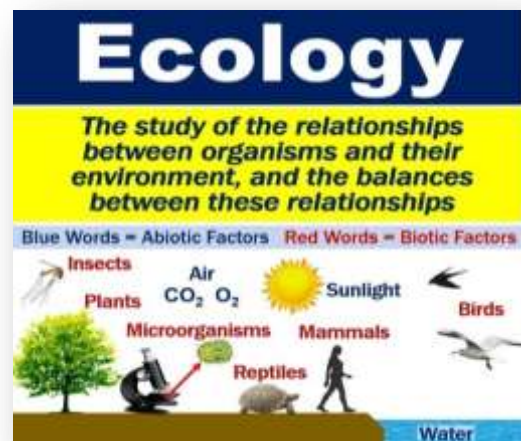
In biochemical terms, GH stimulates protein synthesis and increases fat breakdown to provide the energy necessary for tissue growth. It also antagonizes (opposes) the action of *insulin*. GH may act directly on tissues, but much of its effect is mediated by stimulation of the liver and other tissues to produce and release *insulin*-like growth factors, primarily insulin-like growth factor 1 (IGF-1; formerly called somatomedin). GH secretion is stimulated by *growth hormone-releasing hormone* (GHRH) and is inhibited by somatostatin.

Growth Hormone Deficiency

GH deficiency is one of the many causes of short stature and dwarfism. It results primarily from damage to the hypothalamus or to the pituitary gland during fetal development (congenital GH deficiency) or following birth (acquired GH deficiency). GH deficiency may also be caused by mutations in genes that regulate its synthesis and secretion.

S. Kamaleeswaran (BU180916)

III B.Sc., Biochemistry



Ecology

Nature of Ecology

Ecology is the study of the interactions between organisms and their physical and biotic environment. Deanne Erdmann, MS, reviews some general ecological terms, the varying levels of organization in an ecosystem, energy flow through an ecosystem and some of the biogeochemical cycles which occur in nature.

Abiotic Components in Ecology

Temperature – It is one of the major factors which directly affect the life in an area. The temperature on earth follows a general geographic trend.

Temperature affects the various enzymatic reactions in living organisms. As a result, the biodiversity observed in the planet varies along with the temperature gradient.

Water – It is the next important factor that affects life on earth. Water supports most of the life forms on earth. For example, 70% of the human body is made up of water. Similarly, all

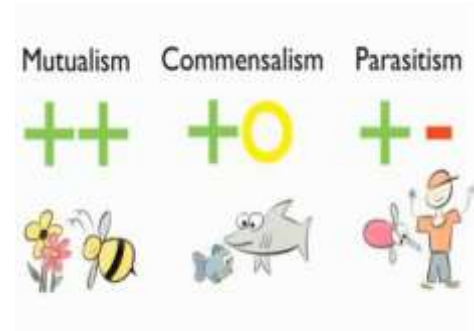
other organisms require water for temperature regulation and many other physiological activities. It has been observed that the species richness is maximum near water bodies.

Light – We already know that light from the sun is the ultimate source of energy for living beings on earth. Plants capture this energy and manufacture food by the process of photosynthesis. This energy is then passed on to the rest of the organisms in the environment by the food chain and food web.

Soil – The type of soil available in an area determines the type of vegetation. This directly results in the type of organisms that can be found. It also contains all the minerals needed by various living beings including plants to support their life.

Adaptation of Organisms to the Environment

All the organisms possess the ability to adapt to the environment through a process of biological variation. Adaptation may differ from different species but they have the same objective for adaptation that is “adjustment to variation.” For example the cactus in the middle of desert draws nourishment from ground and air.



Solar Radiation at the Earth's Surface

- i) Atmospheric effects, including absorption and scattering;
- ii) Local variations in the atmosphere, such as water vapour, clouds and pollution;
- iii) Latitude of the location; and
- iv) The season of the year and the time of the day.

Homeostasis

The polyunsaturated fatty acids (PUFAs) are lipid derivatives of omega-3 (docosahexaenoic acid, DHA, and eicosapentaenoic acid, EPA) or of omega-6 (arachidonic acid, ARA) are synthesized from membrane phospholipids and used as a precursor for endocannabinoids (ECs) mediate significant effects in the fine-tune adjustment of body homeostasis.

Examples of the basic adaptations that help creatures survive

- Shape of a bird's beak
- The number of fingers, colour of the fur

Mutualism and Parasitism

Mutualism is the interaction between two or more organisms where both organisms can benefit from the interaction. An example of mutualism is a Clownfish and a Sea Anemone.

Parasitism is the interaction between two species where only one benefits from the other organism and the other is harmed in turn.

Fruits and Vegetables

Fruits and vegetables contain many vitamins and minerals that are good for health. These include vitamins A (beta-carotene), C and E, magnesium, zinc, phosphorous and folic acid. Folic acid may reduce blood levels of homocysteine, a substance that may be a risk factor for coronary heart disease.

For example beetroot and carrots together help relieve constipation by stimulating the metabolic system. The phyto-nutrients in these veggies help improve digestion due to the presence of fiber that helps keep the gut healthy. This flavoured combination also helps balance the blood sugar levels.

G.S. Geethapriya (BU180929)

III B.Sc., Biochemistry

The Role of Insulin in the Human Body

Introduction

Insulin is a hormone which plays a number of roles in the body's metabolism. Insulin regulates how the body uses and stores glucose and fat. Many of the body's cells rely on insulin to take glucose from the blood for energy.

Insulin and Blood Glucose Level

Insulin helps control blood glucose levels by signalling the liver, muscle and fat cells to take in glucose from the blood. Insulin therefore helps cells to take in glucose to be used for energy. If the body has sufficient energy, insulin signals the liver to take up glucose and store it as glycogen. The liver can store up to around 5% of its mass as glycogen. Some cells in the body can take glucose from the blood without insulin, but most cells do require insulin to be present.

Insulin and Type 1 Diabetes

In type 1 diabetes, the body produces insufficient insulin to regulate blood glucose levels. Without the presence of insulin, many of the body's cells cannot take glucose from the blood and therefore the body uses other sources of energy. Ketones are produced by the liver as an alternative source of energy, however, high levels of the ketones can lead to a dangerous condition called ketoacidosis. People with type 1 diabetes will need to take insulin inspection to compensate the body's lack of insulin.



Insulin and Type 2 Diabetes

Type 2 diabetes is characterized by the body not responding effectively to insulin. This is termed insulin resistance. As a result the body is less able to take up glucose from the blood. In the earlier stages of type 2 diabetes, the body responds by producing more insulin than it would normally need to. If type 2 diabetes develops over a number of years, the extra demands on the pancreas to produce insulin can lead to a loss of insulin producing cells as they wear out. Depending on their level of insulin resistance, people with type 2 diabetes may also need to take insulin injections to manage their blood sugar levels.

Insulin and Fat Storage

Being involved in the regulation of blood glucose, insulin is also involved in how fat is being used by the body. When the liver has taken up its capacity of glycogen, insulin signals fat cells to take up glucose to be stored as triglycerides. An additional effect of insulin is in inhibiting the breakdown of fats.

Synthetic Insulin

People with type 1 diabetes and a proportion of people with type 2 diabetes will need to take exogenous insulin. Insulin is usually injected, it continually infuses insulin through the day and night. Synthetic insulin is made in laboratories and is the most commonly prescribed form of insulin for medication purposes. Non-synthetic animal insulin is also available in the UK if preferred.

D. Manoj Kumar (BU180931)

III B.Sc., Biochemistry

Immunity Boosting Measures for Self Care – Covid – 19 Crises

The Ministry of AYUSH recommendations based on Ayurveda literature and scientific publications for preventive health measures and boosting immunity with special reference to respiratory health are given below:

1. Measures for Enhancing Immunity

- Drink warm water throughout the day
- Daily practice of yogasana, pranayama and meditation for at least 30 minutes
- Spices like turmeric, cumin, coriander and garlic recommended in cooking.

2. Ayurvedic Immunity Enhancing Tips

- Take chyavanprash 10gm (1tsf) in the morning
- Diabetics should take sugar free chyavanprash

- Drink herbal tea/decoction made from tulsi, cinnamon, black pepper, ginger – once or twice a day and add jaggery or sugar or fresh lemon juice to your taste, if needed.

3. Simple Ayurvedic Procedures

- **Nasal Application**

Apply sesame oil/coconut oil or ghee in both the nostrils (Pratimarsh Nasya) morning and evening

- **Oil Pulling Therapy**

Take 1 table spoon sesame or coconut oil in mouth. Do not drink swish in the mouth for 2 to 3 minutes and spit it off followed by warm water rinse. This can be done once or twice a day

4. Actions during Dry Cough/ Sore Throat

- Steam inhalation with fresh mint leaves and caraway seeds can be practised once in a day.
- Clove powder mixed with natural sugar/honey can be taken 2-3 times a day in case of cough or throat irritation.
- These can be taken generally as they have remedy to treat cough and sore throat. However it is best to consult doctors if these symptoms persist.

V.K. Pavithra (BP190906)

II M.Sc., Biochemistry

Wild Cousins of the Honey Bee

Wild bees, like honey bees, are important pollinators of many cultivated plants in agriculture. Scientists worldwide have therefore joined forces to gain a better understanding of how we can support them to increase pollination of crops. The honey bee is one of humanity's favorite insects. Since being domesticated by humans at least 6,000 years ago, honey bees have played an important role in honey production and later also in crop pollination. But while the Western Honey Bee is the best-known bee species, it's surprising to learn that it is only one of more than 20,000 different bee species worldwide, including other honey bees, bumble bees, solitary bees and stingless bees.

Bees vary greatly in appearance, size and preferences. While some wild bees such as the different kinds of stingless bees and many sorts of bumble bees live in colonies, most of them live on their own (solitary). And whereas managed honey bees live in beehives, wild bees rely on a variety of nesting places. Eighty percent nest in the ground, some species burrow in

wood and some nest in empty snail shells, while others look for holes in stone walls. For their food, they have adapted to forage on different plant species to varying extents, with some of them specializing to forage only on certain plants.

Both wild and managed bees contribute to crop pollination in their own ways, across crop types and regions. In many places, they complement each other and enhance pollination overall, yet in others there may be negative ecological effects due to competition for food. Besides honey bees, growers are increasingly relying on managing other bee species to pollinate their crops; bumble bees are used in greenhouses, mason bees are used in orchards and leafcutter bees are preferred for alfalfa. Unmanaged wild bees also provide pollination services, playing a significant role in certain landscapes. As Professor David Kleijn from Wageningen University in the Netherlands, who conducted a five-continent study on pollination, found out that, “Wild bees contribute US\$ 3,000 per hectare annually to the production of insect-pollinated arable crops.” This is about the same as managed honey bees.

For the farmer, the advantage of wild bees is that, as the group is so big and diverse, there is every chance that there may be a pollination specialist for his region and crops. Wild bees are also freely available to him, provided that crop and landscape offer a suitable habitat for them. And most species of wild bee are solitary, thus not living in colonies and as such, they are less prone to, for instance, diseases that can afflict managed bee populations. Yet farmers may find that local, wild pollinators do not provide the level of pollination service they need. For example, wild bees are often too sparsely distributed in intensively farmed landscapes to pollinate crops adequately. Accordingly, many farmers opt for the convenience of buying or renting managed pollinators. These can provide pollination services in a more reliable way and are easier to ‘steer’ than wild populations.

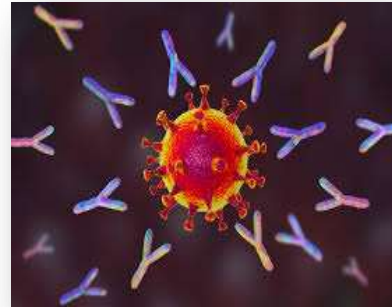
“For crop production, at the end of the day, it’s all about getting the balance right,” says Christian Maus from Regulatory Landscape and Intelligence at Bayer’s Crop Science Division in Monheim, Germany. Having the right number of managed and wild pollinators in an agricultural region is key as for many crops; a mix of both is the ideal scenario. Wild bees can be much more efficient pollinators than their honey bee relatives.

M. Manivannan (BP190905)

II M.Sc., Biochemistry

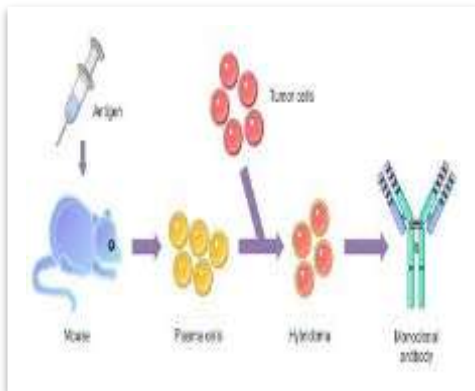
Monoclonal Antibody

Monoclonal Antibodies are cells derived by cell division from a single ancestral cell. Monoclonal Antibodies are a class of antibodies with identical offspring of a hybridoma and are very specific for a particular location in the body derived from a single clone and can be grown indefinitely. Monoclonal Antibodies recognize and bind to antigens in order to discriminate between specific epitopes which provide protection against disease organisms. Monoclonal antibodies target various proteins that influence cell activity such as receptors or other proteins present on the surface of normal and cancer cells. The specificity of Monoclonal Antibodies allows it's binding to cancerous cells by coupling a cytotoxic agent such as a strong radioactive which then seeks out to destroy the cancer cells while not harming the healthy ones. Tumor cells that are able to replicate endlessly are fused with mammalian cells that produce a specific antibody, which results in fusion called hybridoma that continuously produces antibodies.



Monoclonal Antibody – Overview

Those antibodies are named monoclonal because they come from only one type of a cell, which is the hybridoma cell. Antibodies that are produced by conventional methods and derived from preparations containing many kinds of cells are called polyclonal Antibodies. Monoclonal antibodies are artificially produced against a specific antigen in order to bind to their target antigens. Laboratory production of monoclonal antibodies is produced from clones of only 1 cell which means that every monoclonal antibody produced by the cell is the same. Fusion of cell culture myeloma cells with mammalian spleen cells antibodies result in hybrid cells/hybridomas which produces large amounts of monoclonal antibody.



The cell fusion results in two different types of cells, one with the ability to grow continually, and the other with the ability to produce bulk amounts of purified antibody. Hybrid cells produce only 1 exact antibody that is purer than polyclonal antibodies produced by conventional techniques. Monoclonal Antibodies are far more effective than conventional drugs since drugs attack the foreign substance and the body's own cells that cause harsh side effects and the monoclonal antibody only targets the foreign antigen/target molecule, without or only minor side effects.

“With new infections it is a race between the body making new antibodies versus the virus replicating, destroying cells and doing its damage. The antibodies that are made in humans or in mice can be isolated by several tricks. The classic one is to fuse the B-cells with leukemic cells to make them immortal.” “The fused B-cells called hybridomas are grown individually

and tested whether they make an antibody that would recognize the target, because they come from single B-cells hybridomas, they make only one specific antibody which is called a monoclonal antibody. When a monoclonal-like [antibody that] generated and it's given to patients it does its work immediately, that is, much faster than the body could make its own antibodies," currently testing the antibody in animal models and also collaborating with a pharmaceutical company to develop the antibody further. "On the more academic side there are many studies going on as to how the antibody acts on the protein that the virus uses to infect cells."

R. Jumail Ahamed (B180909)

III B.Sc., Biochemistry

Human Microbiome

The human microbiota consists of 10-100 trillion symbiotic microbial cells harboured in each person, primarily bacteria in the gut; the human microbiome consists of the genes that these cells harbour. Microbiome project worldwide have been launched with the goal of understanding the roles that these symbiots play and their impacts on human health. Microbiota and microbiome are often used interchangeably.

Gut Microbiome

The gut microbiome plays an important role in digestion and nutrition. The evidence is mounting for the inextricable link between a host microbiota, digestion and metabolism. The analysis of humans and 59 additional mammalian species, 16s rRNA sequence clustered together carnivores and herbivores in principal coordinates spacing, showing that community structure differs depending on diets.

Gut microbiota also seems to play an important role in obesity. Germ free mice that receive a transplant of gut microbiota from conventional mice have an increase in adiposity without increasing food intake due to increased energy extraction from the diet and increased energy deposition into host adipocytes. The two major microbial division, firmicutes and bacteroidetes, show different abundances depending on the phenotype. Importantly, the genetic diversity found within our gut microbiota allows us to digest compounds via metabolic pathways not explicitly coded for in the mammalian genome, greatly increasing our ability to extract energy from our diverse diets.

The correlation between microbes and obesity is perhaps best illustrated through weight loss. As different groups of human subject were placed on either a fat - restricted or a carbohydrate - restricted diet, their abundance of bacteroidetes increased as their body weight decreased, transitioning from the signature 'obese' microbial community to a lean community. Thus, the modulation of a patient's microbiota might be a therapeutic option for promoting weight gain in underweight children. Surprisingly, the microbes that we ingest with our food might be providing our individual microbiome with new genes to digest new foods. Thus, microbes

have the ability to greatly increase the number of metabolic tools of the human gut, allowing us to digest an array of substrates.

G. Paviya (BP190903)

II M.Sc., Biochemistry

Survey on Nature Inspired Algorithm for Feature Selection and Classification for Diabetes Datasets

Introduction

World Health Organization (WHO) appraises that over 180 million people in the world have diabetes and this rate is estimated to increase by 2030. This growth is associated with the increasing average age of society, an increase in obesity and also probably the increase in the longevity of those with diabetes. Diabetes describes a group of metabolic diseases in which the person has high blood glucose (blood sugar), either because insulin production is inadequate, or because the body's cells do not respond properly to insulin or both. This leads to various blood vessels damage. So, there is an increase of diabetes detection today.

Nature-inspired algorithms are a set of novel problem solving methodologies and approaches and have been attracting considerable attention by their good performance. Several real-world optimization problems have been studied by several nature-inspired algorithms. Nature-inspired algorithms such as Artificial Neural Networks (ANN), Fuzzy Systems (FS), Evolutionary Computing (EC) and Swarm Intelligence (SI) have been applied to solve many real-world problems in data classification. It is one of the tasks in data mining. Data pre-processing is required to prepare the data for data mining to increase the predictive accuracy.

Data pre-processing procedures could reduce the amount of data to be analyzed without losing critical information and to improve the quality of the data. Finally based on reduced dataset classifier detects disease to select small no of features that is also optimal feature subset. F-score is one of the filtering methods. The F-score method uses the F-score values to measure the discriminating power of individual features in the database with respect to class labels. F-score method calculates F-score of all the features of dataset. Based on the estimated values all features are arranged in descending order of importance. The features with high rank are known as most informative features. In feature selection we select most informative features.

Clustering error is used as performance indicator to select optimal feature subset from different subsets. Plasma glucose concentration, body mass index and age form optimal feature subset as a result of feature selection. So, feature selection methods reduce number of dimensions of dataset. Classification methods make use of attributes in the process of classification. Wrapper method uses classification algorithm to select the optimal attributes. Then SVM determines the fitness value of each attributes. The fitness value of attributes is used to select optimal feature subset. In short, filtering method removes undesirable features

before classification begins, while the wrapper method applies classification algorithm to select optimal features. Recursive feature elimination with support vector machine is based on the embedded method. It removes redundant features during iteration. However, this algorithm is limited theoretically to the linear kernel in SVM, because it has difficult characteristics of the implicit mapping.

Feature selection is a data pre-processing step applied to diabetes dataset. It selects subset of features from whole feature set based on some statistical score and removes redundant features that do not contribute to performance. There are three main approaches in feature selection: filter, wrapper, and embedded methods. Filter methods select high ranked features based on a statistical score as a preprocessing step. Wrapper and embedded approach require considering the design of a classifier to select a subset of features. Various filtering methods like F-score, Relief are available for feature selection.

Overview of Nature-Inspired Algorithms

Artificial Neural Network

Artificial Neural Networks (ANN) is a biologically inspired computing code with the number of simple highly interconnected processing elements for simulating human brain working and to process information model.

Fuzzy Systems

It helps to solve a problem after considering all available data. Then it takes the best possible decision for the given input. The FL method imitates the way of decision making in a human, which considers all the possibilities between digital values T and F.

Ant Colony Optimization (ACO)

Ant colony optimization is a probabilistic technique for solving computational problems, when it can be reduced to finding good paths through graphs.

Genetic Algorithm

A genetic algorithm is a search heuristic that is inspired by Charles Darwin's theory of natural evolution. This algorithm reflects the process of natural selection where the fittest individuals are selected for reproduction in order to produce offspring of the next generation.

Evolutionary Algorithm

Evolutionary algorithm is a subset of evolutionary computation, a generic population-based meta heuristic optimization algorithm. An evolutionary algorithm uses mechanisms inspired by biological evolution, such as reproduction, mutation, recombination and selection.

Swarm Intelligence Algorithm

Swarm intelligence algorithm is the collective behaviour of decentralized systems, natural or artificial. The concept is employed in work on artificial intelligence. The expression was

introduced by Gerardo Beni and Jing Wang in 1989, in the context of cellular robotic systems.

Particle Swarm Optimization

The particle swarm optimization is a computational method that optimizes a problem of a candidate to set solution with regard to a given measure of quality. It solves a problem by having a population of candidate solution.

Whale Optimization Algorithm

The WOA is a new optimization technique for solving optimization problems. This algorithm includes three operators to simulate the search for prey, encircling prey, and bubble-net foraging behavior of humpback whales.

Overview of Diabetes

Diabetes is a disease that occurs when the insulin production in the body is inadequate or the body is unable to use the produced insulin in a proper manner, as a result this leads to high blood glucose. The body cells break down the food into glucose and this glucose needs to be transported to all the cells of the body. The insulin is the hormone that directs the glucose that is produced by breaking down the food into the body cells. Any change in the production of insulin leads to an increase in the organs. Generally a person is considered to be suffering from diabetes, when blood sugar levels are above normal.

Types of Diabetes

Type1 Diabetes

A chronic condition in which the pancreas produces little or no insulin. It is also called juvenile diabetes.

Type 2 Diabetes

A chronic condition that affects the way the body processes blood sugar (glucose). This happens when the cells become insensitive to insulin and the blood sugar gradually gets too high. It is also called adult onset diabetes.

Gestational Diabetes

A form of high blood sugar affecting pregnant women. If not treated, it can lead to complications during childbirth. Controlling the diet and taking insulin can control this form of diabetes. Those who develop gestational diabetes are at higher risk of developing type 2 diabetes later in life.

Conclusion

This research work implements a nature inspired algorithm for feature selection and classification for diabetes data sets. The proposed technique comprises selecting the features first then its classification. This research work also analyses the diabetes using nature inspired algorithm. The feature selection reduces the number of dimensions by selecting most informative features based on some statistical score. Then performance of classification is evaluated on the reduced diabetes dataset. We can say that embedding feature selection method in diabetes prediction improves performance of classification. F-score gives better performance of classification than other feature selection methods.

G. Nivetha (BP191002L)

III MCA

Comparative Study of Data Cleansing Tools

Introduction

Data cleaning is a part of data preprocessing before data mining, prior to process of mining information in a data warehouse, data cleaning is crucial because of garbage in and garbage out principle (1). Data cleaning is also called data cleansing or scrubbing. It deals with detecting and removing errors and inconsistencies from data in order to improve quality of data. The main objective of data cleaning is to reduce the time and complexity of mining process and increase the quality of datum in data warehouse. Data is constantly being produced in every sector. However, data is produced in many forms, with various levels of quality and some data may have poor quality.

In big data processing, data cleaning is a critical and an important step prior to data processing and maintenance (Müller & Freytag, 2005). Data cleaning is important to both data from a single source and data from multiple sources. Data cleaning is an essential step for the data fusion process, which is the process of merging data from multiple sources. Fusing poor quality data from various sources together will cause more issues afterwards. Therefore, adequate cleaning of data from various sources before integration will have significant impact on the outcome of data fusion.

- Compares the performance of four data cleaning tools on two real world data sets. The metrics include their features, required platforms and skill level, time of completion, ease of implementation/usage, etc.
- Proposes a guideline for choosing data cleaning tools.

Tools

Open Refine

Formerly known as Google refine, this powerful tool comes handy for dealing with messy data, cleaning and transforming it. It's a good solution to those looking for free and open

source data cleansing tools and software programmes. It can also transform data from one format to another, letting to explore big data sets with ease, reconcile and match data, clean and transform at a faster pace.

Drake

This is simple to use. Extensible and text based data workflow has data processing steps defined along with their inputs and outputs, where it can automatically resolve their dependencies and calculate the command to execute and the order that it should be executed. It is designed especially for data workflow management and organizes command execution around data and its dependencies.

Data Wrangler

Wrangler is an interactive tool for data cleaning and transformation. One of the best features of this tool includes less formatting time and larger focus on analyzing data. It helps data analysts in cleaning and preparing messy, diverse data more quickly and accurately. Its machine learning algorithms help in preparing data by suggesting common transformations and aggregations. This also comes free.

Data Cleaner

The heart of data cleaner is a strong data profiling engine for discovering and analyzing the quality of the data. It helps in finding the patterns, missing values, character sets and other characteristics of the data values. A strong profiling engine detects duplicates using fuzzy logic and creating single version of it. It also lets to build one's own cleansing rules and composes them into several scenarios to target databases.

Win Pure

Data quality is an important contributor in the overall success of a project or campaign. Inaccurate data leads to wrong assumptions and analysis. Consequently it leads to failure of the project or campaign.

Tibco Clarity

This data cleaning tool offers on demand software services from the web in the form of Software-as-a-service. It lets users to validate the data, in duplication and cleansing addresses to help identify trends quickly and to make smarter decisions. It can standardize raw data collected from disparate sources to provide good quality data for accurate analysis.

Data Ladder

It offers products data match; an affordable cleaning and data quality tool and data match enterprise that includes advanced fuzzy matching algorithms for up to 100 million records, and as one of the highest matching accuracies and speed in the industry. These user-friendly tools help businesses from any size and any industry to manage their data cleansing processes with ease

Conclusion

Data cleaning is very necessary part of data mining. From the above study it is evident that there are different types of problems in data cleaning. Data cleaning methods and approaches depend upon the type of data which we want to clean and according to that we apply particular methods.

S. Keerthika (BP191013L)

III MCA



Digital Frauds

Digital fraud is a type of fraud or deception which makes use of the internet and could involve hiding of information or providing incorrect information for the purpose of tricking victims out of money, property and inheritance.

Digital fraud is not considered a single, distinctive crime but covers a range of illegal and illicit actions that are committed in cyberspace. According to new LexisNexis study, overall retail fraud attempts doubled over year and tripled since 2017. In the past two years Millennial consumers are especially vulnerable to fraud, losing \$450 million to fraudster. The rise in fraud is not going unnoticed by the federal trade commission.

Types of Frauds in Retail Business

1. Business Identity Theft

According to a study by world pay, identity theft is the most concerning type of digital frauds for ecommerce merchants. This theft works the same way it does for individual victim of identity.

The damage can be devastating to individuals and business. Just like personal identity theft, business identity theft involves a variety of attack and forms.

2. Chargeback Theft

When identity thieves get hold of business credit cards, there is a good chance to impact the business credit score. Chargeback fraud occurs when a cash holder questions a transaction and asks his/her card issuing bank to reverse it.



3. Affiliate Fraud

Affiliate fraud refers to any false or unscrupulous activity conducted to generate commissions from an affiliate marketing programme. Affiliate fraud also encompasses any activities that are explicitly forbidden under the terms and conditions of an affiliate marketing programme.

4. Man in Middle

Man-In-The-Middle Fraud is a crime where an unauthorized third party obtains a consumer's or business's sensitive data as it is being sent over the Internet. This fraud can be accomplished fairly and easily over an unsecured network, such as public WI-FI, or a poorly protected home network. It can also be carried out through installing a malware on the target's computer.

Prevention

There are numbers of digital fraud identity applications available in online.

Password Security

Passwords are initial line of defense when protecting the accounts and data. However, if the same password is used for every account, or a similar one, it results in disadvantage. Avoid password recycling at all costs. If not, hackers can easily gather the personal information (date of birth, address, mother maiden name etc.) which they will use to answer security questions to access the bank account or credit card information.



Improve Threat Detection

It is advised to have a reputable anti-virus and malware protection software installed. This is an initial barrier to hackers and fraudsters. This type of software is used to catch any malicious software or threat to the internet security. Always keep these products updated, as the newer software will offer greater protection.

Safe Surfing

When going online make sure to use a secure computer at home or work, especially for online banking. Avoid using public or shared computers, like at an Internet Cafe, for online banking as there is no assurity of what software is loaded and this could compromise the data.

S. Sangeetha (BP191025L)

III MCA

11 Signs Your Personality is so Intense That it's Intimidating to Others

#1 - You are honest to a fault

When it comes down to it, you value honesty above all else. In fact, you will have an uncomfortable conversation, if necessary, to ensure that you can get straight to the point and put the truth out there. After all, if you don't have the truth, what do you have? Just remember that not everyone is prepared to hear the truth.

#2 - You are a problem solver, not one to wallow

If you're in a difficult situation, you're not the kind of person who is going to sit around wallowing in the struggle you've been facing. Instead, you will instantly get to work trying to find a solution to the problem, working on getting yourself out of that and on to better things.

#3 - You aren't afraid of intimacy

It's surprising how many people in today's society claim to understand the importance of intimacy and then shy away from it completely when the opportunity presents itself. You, however, understand that intimacy comes on many levels, and each is necessary in its own way in your relationships including not only romantic relationships but also friendships and family connections. This includes actions as simple as a hug or a pat on the back.

#4 - You are incredibly intense in all that you do

You intend on living life to the fullest, experiencing everything available. This causes you to lead your life with a level of intensity that most will fail to understand. The few who understand you will share your passion for finding enjoyment in every moment; those are the people you need to surround yourself with.

#5 - You ask A LOT of questions

While this may come across to others like you are interrogating them, the truth is that you want to get to know them on a deeper and more meaningful level. You aren't asking for manipulative reasons or to find out information you can use for your benefit later, you genuinely want to understand others better and asking questions is the best way to learn more.

#6 - You refuse to waste your time waiting around for others

Sure, you understand the importance of friendship and companionship but when it comes down to it, you have places to go and things to accomplish. If someone is going to waste your time or leave you waiting around for them to recognize what you have to offer, you have better things to do. You'll simply walk away and devote that time and energy into those who are ready.

#7 - You are like a human lie detector, able to see through the BS

When someone is being insincere or dishonest, it's like a red light goes off in your mind warning you that they are screwing around. As someone who values honesty, as we

previously discussed, there's nothing you see as a bigger deal breaker than someone who tells lies. You have no interest in sticking around for those that don't respect you enough to be transparent with you.

#8 - You are incredibly open-minded

Too many people have masked closed-mindedness today with the illusion that they are merely staying true to their morals and beliefs rather than admitting. They simply haven't *tried* to understand. Instead, you are open and trying to understand new ideas, concepts and ways of living. You may not agree, but you're always willing to learn more.

#9 - You always have a clear picture of what you want

Every situation you enter into, you do so with the end already in mind and you refuse to settle for anything less. Your goals are always a top priority which can lead you to say or do things in your quest to achieve success that will make others feel uncomfortable. Just be careful not to be *too* goal focused or you can lose sight of the beauty in the little moments in between.

#10 - You are a creature of habit

Schedules and consistency are your friends, creating a solid and predictable foundation upon which you can build your life. You like to know what to expect and how you should prepare for it and you have no interest in surprises.

#11 - You have no interest in shallow relationships

You're not the kind of person who is going to enjoy a one-night stand or a casual fling. If you get into a relationship, you're all in. You want to connect with someone on a deeper level, establishing a meaningful relationship, and anything less is a waste of time in your opinion.

A. Jerome Edward (BP191050L)

III MCA

Data Classification in Medical Datasets

Introduction

In the medical field, there is a tremendous amount of data being generated. This data if properly processed can provide useful information. For instance, a medical study could find a link between the success of a medicine with the patient's height. The reality might be that when the data includes information on parameters including height, body weight, eye colour, shoe size and more, some connections may appear to be important just by chance. We can implement big data systems that can analyze DNA in a matter of minutes. When these systems go through vast amount of medical data, they find patterns. These patterns could someday lead us to find cures to some of the deadliest diseases. Governments can now analyze data regarding the drugs that are prescribed to patients by doctors in the public sector.

This helps them gain a clear picture of the types of drugs that are being prescribed, thereby helping to understand whether the patients are receiving the most up to date medicines.

The world today has made giant leaps in the field of Medicine. There is a tremendous amount of researches being carried out in this field leading to new discoveries that is making a heavy impact on mankind. Data being generated in this field is increasing enormously. A need has arisen to analyze these data in order to find out the meaningful and relevant hidden patterns. These patterns can be used for clinical diagnosis.

Data mining is an efficient approach in discovering these patterns. The classification techniques include k-Nearest neighbour (kNN), Decision Tree, Naive Bayes which are hard computing algorithms, whereas the soft computing algorithms used in this study include Support Vector Machine (SVM), Artificial Neural Networks (ANN) and Fuzzy k-Means clustering. The algorithms are applied to three kinds of datasets that are Breast Cancer Wisconsin, Haberman Data and Contraceptive Method Choice dataset. The results show that, soft computing based classification algorithms are better classifications than the traditional classification algorithms in terms of various classification performance measures.

Problem

Medical data mining is the process of exploration of large quantities of data in order to discover meaningful patterns. Real world medical data involve huge databases usually contain missing, inaccurate, noisy or inconsistent data. Imperfect data may:

- ❖ Negatively impact on pattern discovery and results may not be trustworthy.
- ❖ Increase the chances of discovering spurious patterns. They may lead to over fitting of the models Traditional classification techniques don't handle these data imperfections, noises, outliers etc. in the data and thus lead to less accurate results. One of the most common uses of medical data mining is to predict what disease a patient will suffer from based on his lifestyle. The traditional techniques will classify a patient to only one group indicating that he is at risk of suffering from only one kind of disease. But in fact, he may suffer from multiple diseases. (belonging to different groups of classification at the same time)

Soft Computing Techniques

Soft computing techniques are a collection of methodologies that

- Exploit the tolerance for imperfection and uncertainty
- Provide capability to handle real life ambiguous situations. Try to achieve robustness against imperfection.

Mostly Used Techniques

- K Nearest Neighbour (knn) - One of the most straightforward classifier in machine learning is the Nearest Neighbour Classifier

- Support Vector Machine (SVM)
- Bayesian network

Techniques and Algorithm

For medical data different data mining techniques used are decision tree algorithms like ID3, C4.5, C5.0, and CART, neural networks, Fuzzy cluster analysis, Bayesian Network, Naive Bayesian algorithm, Naive Bayes, K-means, Time series technique, combination of SVM, ID3 and ANN, cluster and sorting, k-NN, and Bayesian Network.

These algorithms enhance the classification process to be more accurate and show various approaches in medical data classification. Accordingly, the review provides the summary of classification algorithms with their usefulness in health statistics classification.

The guidelines on the usage of the different data mining techniques are: Identification of the unnecessary attributes which impede the processing task is crucial before the application of the classification technique. Besides acting as noise and disturbing the process, they also affect the classifier performance. To identify these, statistical methods are employed. In contrast, the feature selection methods are engaged to select functional attributes in order to improve the precision and success of the classification model thus. It is the researchers have found that there is no classifier that generates the best result for each dataset.

Conclusion

Hence, it is observed that data mining techniques have been employed for medical data classification. There are voluminous records in this medical data domain and because of this it has become a requisite to use data mining techniques to help in decision support and prediction in the field of healthcare to identify diseases. Therefore, medical data mining contributes to business intelligence which is useful for diagnosing of diseases. It sheds light on the data mining techniques that are used for medical data for various diseases which are identified and diagnosed regarding human health.

V. Pavithra (BP191006L)

III MCA

A Great Leader

How to be a Great Leader?

Anyone can sit in the corner of the office and delegate tasks, but there is more to effective leadership than that. Effective leaders have major impacts on not only the team members they manage, but also their company as a whole. Employees who work under great leaders tend to be happier, more productive and more connected to their organization – and this has a ripple effect that reaches the business’s bottom line.

Over the decades, many companies could not compete with global competition. Among the ones that did succeed, most could not sustain their position in the market.

Leaders like Steve Jobs, Elon Musk and Warren Buffet, with their vision, unshakable determination and persistent in hard work, led their respective companies to great heights. With their belief and strong leadership qualities, they gave a new dimension to the world of business.

Before deep – diving into the leadership qualities, let's understand leadership in brief. A recent study by the Centre for Creative Leadership showed that roughly 38% to more than half of new leaders fail within their first 18 months. Leaders can avoid becoming part of this staggering statistic quality by incorporating good leadership strategies that motivate their team members to accomplish their goals.

If your actions inspire others to dream more, learn more, do more, and

Become more, you are a leader.

- John Quincy Adam

What is a leadership?

Being a good leader is not a cakewalk. One must possess effective leadership qualities that help them achieve higher goals and objectives. Be it resistance and persistence of Mahatma Gandhi or the vision of Elon Musk.

There are 25 essential leadership qualities that help leaders to achieve greater success:

- Integrity
- Innovative
- Honesty
- Active listening
- Self confidence
- Visionary
- Delegation
- Decision making
- Problem solving skill
- Fair attitude
- Inquisitiveness

- Self-motivation
- Humility
- Care for others
- Self-discipline
- Emotional intelligence
- Passion
- Resilience
- Accountability
- Supportive
- Tech – Savvy
- Empathy
- Learning ability
- Empowerment
- Strong communication

Conclusion

Every leader has an urge to lead inspire and contribute to the greater good. No one can own all these leadership qualities.

It is a consistent effort and self-belief that paves the path. Leaders should, therefore, be mindful of the leadership skills and exercise them for sustainable growth.

P. Nambi (AU190403)

II B.Sc., Chemistry (Shift-I)

The Social Dilemma

Social Dilemma is that we the three billion people are forced to use technology platforms that are not aligned with the well-being of society.

“Technology itself is not a bad thing, it’s actually a beautiful thing as long as we’re in charge of it.”

The technology that connects us also controls us, manipulates us, polarizes us, distracts us, monetizes us and unfortunately divides us.

So, who is responsible for these? Absolutely the so-called tech giant companies like Google, Facebook and Twitter etc.

They have their business models for mining of our data, using the technologies like machine learning, artificial intelligence to get the job done, make the people bring attention to it and start them to get addicted.

The number of countries with political disinformation campaigns on social media have doubled in the past two years.

- New York Times, 2019

We think that we're the customer and they're just offering us a product. But really how much have we paid for them recently? Not very much but zero.

So how are they worth \$500 billion? Well, they make money from our attention and our behaviour. They need us to spend lots of time on their services.

A study on 5000 people found that, higher social media use is correlated with self-reported declines in mental and physical health and life satisfaction.

American Journal of Epidemiology, 2017

The counter measures to protect oneself against social media are,

1. Turn off notifications or reduce the number of notifications you receive.
2. Uninstall social media and news apps that are wasting time.
3. Use a search engine that doesn't store search history, like Qwant.
4. Fact-check before sharing, liking or commenting when the information looks surprising.
5. Obtain sources of information with different perspectives, including sources that one might disagree with.
6. Try to avoid ant click bait material.
7. Keep devices out of the bedroom after a certain time.
8. Do not allow children to use social media until they reach high school.

M. Sudhagar (BU181042)

III BCA

Space Microbiology

Life can be found everywhere on our planet, even in the harshest environments where human life would be impossible. Microorganisms have been found to thrive from the permafrost of Antarctica to the driest places in the Atacama Desert. Even in artificial environments such as the International Space Station (ISS), several species of microorganisms can be found. Most microorganisms come from the astronauts themselves or from equipment transported to the station. These microorganisms can be a threat to both the astronaut's health and planetary protection. However, they also provide an opportunity to study and maintain the microbiome of the ISS and to produce products of interest, such as vitamins or food conservatives. Astromicrobiology or Exomicrobiology is the study of microorganisms in outer space. It stems from an interdisciplinary approach, which incorporates both Microbiology and Astrobiology.

The responses of microorganisms (viruses, bacterial spores, fungal spores and lichens) to selected factors of space (microgravity, galactic cosmic radiation, solar UV radiation, and space vacuum) were determined in space and laboratory simulation experiments. Microbial growth and viability characteristics during flights were investigated by researchers from the USSR as early as 1957. The characteristics of the human – microorganism ecosystem formed during space flight indicated that bacterial levels tended to increase modestly during flight; opportunistic pathogens were activated to some extent and settled in various niches for pathogenicity. In 2006, Cheryl *et al.* determined that *Salmonella* grown during the US space shuttle mission STS-115 exhibited major changes in the expression of 167 genes.

When administered to mice back on Earth, the bacteria were more deadly than an equivalent strain cultivated on the ground. Space Research Projects on *Streptococcus pneumoniae* performed in 2008 by NASA (SPEGIS) revealed that Low - Shear modeled Microgravity (LSMMG) increases the capacity of *Streptococcus pneumoniae* to adhere to and infect respiratory epithelial cells in a mouse - infection model, the medium lethal dose 50 (LD₅₀) of the microgravity -induced strain was significantly lower than that of the wild-type strain. Space flight can alter the growth rate of gut microorganisms. For example, *Escherichia coli* and *Bacillus subtilis* grow to higher Stationary phase concentrations and have shorter Lag phase durations in a space microgravity environment. Furthermore, an increased exponential growth rate has also been observed in space.

The enhancement of microbial production by spaceflight may have clinical applications. In the 1970s, NASA proposed the utilization of space environmental resources for space-based pharmaceutical development. Space-based pharmaceutical research mainly focused on space-based microbial pharmaceuticals, a new microbial breeding technology primarily utilizing the mutagenic effects of the unique space environment, including microgravity, high vacuum, strong radiation, weak magnetic fields, and extreme differences in temperature, to produce antibiotics, vaccines, and secondary metabolites that are extremely difficult or expensive to produce on the ground.

The first experiment on the effects of spaceflight on microbial antibiotic production was performed in 1996. Researchers sent *Humicola fuscoatra* WC5157 into space via the US space shuttle mission STS-77 for 10 days. Post flight HPLC analysis revealed that in the flight samples, the production of monorden, an antifungal agent, by *Humicola fuscoatra* WC5157 increased up to 190% compared to ground control samples. In another experiment on the US space shuttle mission STS80 in 2001, *Streptomyces plicatus* was sent into space for a 17 – day flight. After spaceflight, the production of the anticancer agent Actinomycin D was 115 % higher compared to ground control samples.

Another area of space microbial pharmaceutical research is the enhancement of secondary metabolite production. In 2011, a strain developed by Genetic Engineering to produce recombinant human interferon α 1b was sent to space aboard the Shenzhou VIII spacecraft. After the 17 day space flight, mutant strains that highly expressed the target gene were identified. After a series of screening of spaceflight-treated bacteria and a quantitative comparison of the mutant strains and original strain, five strains that exhibited significant increases in the production of the target proteins of up to 3 fold were obtained.

In recent years, the extensive use of broad-spectrum antibiotics has increased the prevalence of multidrug-resistant and pan-resistant pathogenic microorganisms and limited the role of antibiotics. The search for new anti-infective strategies has become increasingly urgent. Spaceflight provides a new platform for traditional microbiological research that may accelerate the development of mutations in specific factors leading to drug resistance. We can combine traditional pharmaceutical and space environment biotechnology to develop space pharmaceutical technology.

R. Nisha (BU181504)

III B.Sc., Microbiology

Medicinal Properties of Turmeric

Turmeric is derived from rhizomatous herbaceous perennial plant *Curcuma longa*. It is used in every household in India for cooking and medicinal purposes. Turmeric has found its spotlight in western countries and the rest of the world, because of its wide range of therapeutic benefits.

The use of turmeric powder dates back nearly 4000 years in the Vedic culture in India. Ayurveda, Unani and Siddha medicine uses turmeric as a home remedy for numerous diseases. This golden spice of life is considered auspicious and is a part of religious rituals. In ancient Hindu medicine, it is used extensively for the treatment of sprain and swelling caused by an injury.

The turmeric has got its unique properties due to its composition. Turmeric consists of 6.3% of protein, 5.1% of fat, 3.5% of minerals, 69.4% of carbohydrates, 23.1% of moisture, curcuminoids, the most important of which is curcumin. Curcumin is the active component of turmeric. It is an excellent anti-inflammatory agent and a powerful antioxidant. But the amount of curcumin is only 3% by weight. And curcumin is poorly absorbed into our blood and to enhance its absorption we can eat black pepper.

It contains piperine that increases the absorption of curcumin. Turmeric is also called a kitchen queen and used in household remedies for diseases such as anorexia, diabetic wounds, hepatic disorders, rheumatism, cough etc. Turmeric exhibits anti-inflammatory, antioxidant, anti-carcinogenic, anti-mutagenic, anticoagulant, anti-fertility, anti-diabetic, antibacterial, antifungal, anti-protozoal, antiviral, anti-fibrotic, antivenin, antiulcer, hypotensive and hypercholesteremia activities.

Research shows that turmeric is haemostatic and can heal both septic and aseptic wounds. Due to its antibiotic and antiseptic properties, it is called as skin's food as it purifies the blood and gives us a healthy skin free from diseases like acne, skin-cancers, eczema etc. It also prevents premature ageing by neutralizing free radicals in our body. Turmeric destroys major hepatotoxins, like aflatoxin and rebuilds the liver and protects it from toxins.

It promotes bile secretion, removes cholesterol from the liver, protects against heart diseases by lowering high blood cholesterol level and by preventing blood clotting, which can lead to heart attack and stroke and protects the lungs from pollution and toxins. Turmeric can cure toothaches and tooth decays too. It is excellent for the women as it helps to regulate menstrual cycle and decreases the intensity of pain in periods.

The active component of turmeric, curcumin can bind heavy metals such as cadmium and lead, thereby reducing toxicity protecting the brain. The CD4+ T-helper and B type immune cells are more significant in number when we ingest curcumin into the body. This increase in immune cells helps to fight cancer. The presence of curcumin and chromium content in turmeric increases glucose metabolism and insulin activity.

Fantastic natural yellow pigment turmeric has been consumed in India since the second millennium BC is used as both medicine and food and is considered holy in Indian tradition. It has become one of the most commended biological molecules giving various health guarding effects which have been studied and established by the scientific community around the world.

B. Anitha (BU181506)

III B.Sc., Microbiology

Bats Immune System and Viral Diseases

Bats are the only group of mammals that can fly. In recent years bats are responsible for some of the most fearsome diseases inducing Zoonotic disease - those that spread from animals to humans. They serve as the natural hosts for numerous viruses including Ebola Virus, SARS (Severe Acute Respiratory Syndrome), MERS (Middle – East Respiratory Syndrome) and recently the Novel Coronavirus. These viruses can cause disease in humans and the bats can act as a reservoir of diseases.

The virus can replicate faster in bat host without damaging the bat, but when it emerges into something that lacks a bat immune system, it becomes virulent. The reason why bats can harbour these viruses without getting affected is simply because bats can avoid excessive virus-induced inflammation, which often causes severe diseases in animals and people get infected with viruses.

When pathogens infect humans, the immune system gets activated and typical inflammatory response to fight the microbes is seen. While controlled inflammatory response to fight infection helps keep humans healthy, it can contribute to the damage caused by infectious diseases and also age-related diseases when the inflammatory response becomes excessive. In complete contrast, the researchers found that the inflammatory response is dampened in bats immaterial of the variety of viruses that are present and the viral load.

Bats have a lot of this good immune response - suppressing virus replication that protects them. And they have very little of the not-so-good immune response, which is inflammation. In other words, it seem to have multiple layers of interferon protection: one that stands at the ready to quickly curtail viral replication and another, more standard-issue one that ramps up activity after a viral invader has appeared. But it's not just a blunt one-two punch. The sheer number of interferon genes some bats has hints at a flexible, more nuanced response.

The researchers found that significantly reduced inflammation in bats was because of activation of an important protein NLRP3 that recognizes both cellular stress and viral/bacterial infections are significantly dampened in bat immune cells. The researchers found that reduced activation of the NLRP3 protein was in turn due to impaired production of mRNA (transcript). Since mRNA production is impaired the NLRP3 protein production gets compromised leading to less amount of the protein being produced. But this was not the case with humans there was no impairment to mRNA production so the NLRP3 protein was unaffected. The NLRP3 protein is found as four variants in bats. The researchers found that the function of all the four variants in bats was dampened compared with human NLRP3. The NLRP3 functions as a pathogen recognition receptor to activate inflammatory mediators.

A. Sudha (BU181510)

III B.Sc., Microbiology

Introduction of DNA into Plant Cell

Gene transfer to plant cell is done by two different methods.

a) Vector Mediated Method

b) Vector Less Method

a) Vector Mediated Method

It uses the natural ability of certain bacteria and viruses to naturally transfer DNA to the genomes of infected plant cell.

i) Agrobacterium - Mediated Transformation

Member of the genus *Agrobacterium* is also known as natural genetic engineers of plants since these bacteria have the ability to transfer T-DNA of their plasmid into plant genome upon infection of cells at the wound site. In the natural environment, *Agrobacterium* introduces its T-DNA into compatible host plant cells.

The foreign gene is cloned in the T-DNA region of T_i- or R_i- plasmid by replacing unwanted sequences. *Agrobacterium* transfers T-DNA, which makes up a small region of the T_i- or R_i- plasmid. Transfer requires three major elements

- The right and left border sequences that flank T-DNA.
- Virus genes located on the T_i- and R_i- plasmid
- Some chromosomal genes located on the bacterial chromosome.

These chromosomal genes generally are involved in bacterial exopolysaccharide synthesis, maturation and secretion.

ii) Virus Mediated Transformation

Plant viruses can be employed as gene transfer and expression vectors. But the genomes of plant viruses never integrates into the genome and are not transmitted through seeds, so stable transformation cannot be achieved.

b) Vector Less Method

This uses chemical or physical means to introduce DNA into plant cells. These methods are genotype independent in terms of DNA delivery.

i) Chemical Method

It involves physiochemical uptake of DNA and based on the ability of the protoplast to uptake the foreign DNA from the surrounding solution. Isolated plasmid DNA is mixed with the protoplasts in the presence of polyethylene glycol (PEG). After 15-20 mins of incubation, the protoplasts are cultured in the presence of appropriate selective agent.

ii) Physical Method

It includes the following methods

Electroporation

It creates pores in the cell membrane using electrical pulses of high field strength. If DNA is present in the buffer solution at sufficient concentration, it will be taken up through these forces.

Microinjection

Microinjection of DNA into plant cells has achieved only a limited success because of difficulties in getting the protoplast immobilised and injecting DNA into the protoplast without damaging the tonoplast.

Particle Bombardment

It employs foreign DNA coated high velocity gold or tungsten particles to deliver DNA into plant cells.

Liposome Encapsulation

It was developed to protect the foreign DNA during the transfer process. DNA enclosed in lipid vesicles penetrates into the protoplast where lipase activity of the protoplast dissolves the lipid vesicles and DNA gets released for integration into the host genome.

M. Nivetha (BU181513)

III B.Sc., Microbiology

Spirulina Platensis - Food for Future

Spirulina are unicellular and filamentous blue-green algae that have gained considerable popularity in the health food industry and increasingly as a protein and vitamin supplement to aquaculture diets. It has long been used as a dietary supplement by people living close to the alkaline lakes where it is naturally found. *Spirulina* has been used as a complementary dietary ingredient of feed for fish, shrimp and poultry.

Among the various species of *Spirulina*, the blue green alga *Spirulina platensis* has drawn more attention because it shows a high nutritional content characterized by 70 % protein content and by the presence of minerals, vitamins, amino acids, essential fatty acids etc. *Spirulina* can play an important role in human and animal nutrition, environmental protection through wastewater recycling and energy conservation. *Spirulina* is rich in proteins (60-70 %), vitamins and minerals used as protein supplement in diets of undernourished poor children in developing countries.

One gram of *Spirulina* protein is equivalent to one kilogram of assorted vegetables. The amino acid composition of *Spirulina* protein ranks among the best in the plant world, more than that of soya bean. Studies have shown that *Spirulina* consumption during 4 weeks reduces serum cholesterol levels in human beings by 4.5 % and significantly reduces body

weight. *Spirulina* extract induces the tumor necrosis factor in macrophages, suggesting a possible tumor destruction mechanism. An extract of sulfated polysaccharides, called Calcium-*Spirulina* made up of rhamnose, ribose, mannose, fructose, galactose, xylose, glucose, glucuronic acid, galacturonic acid, and calcium sulfate, obtained from *Spirulina*, showed activity against HIV, Herpes Simplex Virus, Human Cytomegalovirus, Influenza A Virus, Mumps Virus, Measles Virus and various bacterial isolates.

J. Hephzibah (BU181514)

III B.Sc., Microbiology

Use of Microbes in Food Colouring

Colour plays a significant role in the food production and processing sector, contributing to the sensory attribute of food. Food colouring is presumed to have originated back in 1500 BC. Natural colours are assumed safe if they are non-allergic, non-toxic, non-carcinogenic, and biodegradable. The consumer demand for natural colours and their growth as a category is predicted to increase by 7 % annually. Natural colours are primarily derived from plants, insects, mineral ores or microbial sources. Microbial colorants are preferable because of scalability ease as well as potentially lower cost of production. Microbial fermentation for the production of natural pigments have several benefits such as cheaper production, higher yields, easier extraction, lower cost raw materials etc.

These can also have anticancer activity, antimicrobial and antioxidant activity. Microbes produce a variety of pigments that can be used as food colours such as carotenoids, flavins, melanins, quinines, monascins, violacein etc. They can also be used as additives, antioxidants, colour intensifiers and functional food ingredients. Using the appropriate fermentation strategies and modifying conditions to be more suitable for the production of pigments, developing low cost processes and extraction processes, co-pigmentation strategies, have all been applied for efficient microbial pigment production.

Advances in organic chemistry and metabolic engineering have enabled the mass production of microbes of interest. Studying the biosynthetic pathway for pigment production can help in understanding the roadblocks in the production of pigments and to counter that, genes can be cloned and recombinant DNA technology can be used to increase pigment production. Newly emerging tools such as nanotechnology has also been effectively used in the food industry, including pigment formulation. Some of the major pigments found in microorganisms which are used as food colorants are canthaxanthin, astaxanthin, prodigiosin, phycocyanin, violacein, riboflavin, beta-carotene, melanin and lycopene.

Microbial pigments can be either inorganic or organic, although organic pigments tend to be more useful as food colorants. Microorganisms are found in almost every environmental niche and have various roles in nature. They are also affiliated with food and are accountable for the fermentation of food products. Microbial pigments are a better alternative to synthetic food colours compared to plants because of their availability, non-seasonality, scalability, higher yield per hectare and straight forward down streaming processing. Microorganisms

produce large quantities of pharmacologically and biologically active compounds that can have a diverse range of activities, including antioxidants, antimicrobial, anticancer, immunoregulatory and anti-inflammatory compounds.

Even though there are many types of natural pigments from various microbial sources, the commercial development of natural pigments as food colorants is challenging. Regulatory hurdles are high for the development of any new compounds for food use, including as a colorant. The cost of using natural colours is five times more than using synthetic colours, especially when used in confectionary items, where it can be 20 times more expensive. Substantial quantities of raw materials are required to produce equal quantities of natural colours than synthetic colours. Higher dosages of a natural colour are normally needed for the desired hue, thereby increasing the cost. There are many new advances in the quick and easy detection of microbial pigments. One of the best examples is the condensed handheld Raman spectrometer, used for detecting pigments with the help of a 532 nm excitation laser. This can detect common and uncommon carotenoids, bacterioruberin and other known pigment compounds. This hand-held device has been used to identify microbial pigments in various ecological niches including halophilic microorganisms.

T. M. Sadiqua Jabeen (BU181515)

III B.Sc., Microbiology

Plant Growth Promoting Rhizobacteria in Plant Disease Management

Plant Growth Promoting Rhizobacteria (PGPR) is a group of rhizosphere microbial population that colonizes the plant roots and promotes the growth and development of plants. The term PGPR was coined by Kloepper and Schroth (1981). The PGPR enhances the plant growth by direct and indirect mechanisms. The direct method includes nitrogen fixation, phosphate solubilization, siderophore production and production of phytohormones while indirect mechanisms include the biocontrol activities like antibiotic production, hydrolytic enzyme production etc. plant growth promoting rhizobacteria plays an important role in sustainable agriculture. Plant disease accounts for the loss of at least 10 % in global food production.

PGPR have received prominent attention primarily because of their dual role in plant growth promotion and disease management. Pathogenic microorganisms affecting plant health are a major threat to agricultural production and ecosystem stability. The term Biocontrol Agents (BCA) is the use of microorganisms to control diseases in an environment friendly approach. The bacterial strains inhibit the growth of pathogens by secretion of antibiotics, toxins, biosurfactants, cell wall degrading enzymes, chitinase and siderophore production. Among this antibiosis is regarded as highly effective mode of action of PGPR in suppression of soil borne pathogens.

Most of the PGPR strains produce one or several groups of antibiotics, which inhibit most of the fungal pathogens. Some of these antibiotics cause membrane damage to pathogens such as *Pythium* sp. and inhibit zoospore formation. For example, PGPR strains like *Pseudomonas*

fluorescens and *Bacillus subtilis* are found to inhibit the growth of root rot pathogen in mulberry plants, stem rot disease and *Fusarium oxysporum* infestation in chick pea. *Bacillus amyloliquefaciens* inhibits the growth of *Rhizoctonia solani* in rice. *Bacillus licheniformis* act as a very effective biocontrol agent against *Pythium aphanidermatum* that causes damping off in cucumber. It has also been reported that Lactic Acid Bacteria (LAB) acts as an effective biocontrol agent against bacterial spot disease in pepper.

Studies have also been conducted to determine whether a mixture of PGPR strains can enhance biological control agent activity of multiple plant disease through antagonism. The efficiency of PGPR as biocontrol agents or microbial inoculants depends on the method of application or inoculation, concentration, dosage, presence or absence of nutrients etc. as agrochemicals adversely affects the human health, PGPR are the promising tool that can be substituted for most of the agrochemicals. They are environmentally safe and eco-friendly to the soil. Many rhizobacteria strain of *Pseudomonas*, *Bacillus*, *Acetobacter*, *Paenibacillus* have been implicated and also been commercialized to manage plant diseases.

S. Sudha (BU181519)

III B.Sc., Microbiology

Acidophilus Milk

Lactobacillus acidophilus is a kind of microorganism. It's a member of *Lactobacillus*, genus of bacteria. Its name gives a sign of what it produces-lactic acid. It does this by creating an enzyme called lactase. Lactase separates lactose, a sugar found in milk into lactic acid. This bacterium is found in mouth, digestive system and vagina and is utilized as a probiotics that are either the equivalent or like the organisms that are found in our body. WHO characterizes probiotics as live small scale living beings, which when directed in sufficient amount present medical advantages on the host.

The principal known utilization of acidophilus milk is in 1916. Standard milk has compound called lactose and human needs to have a sufficient amount of protein to breakdown lactose if body doesn't have it where acidophilus milk steps in. This milk is contrast from normal milk as far as flavour, texture and taste. From the outset it has an unforgiving corrosive taste and in this way faces dismissal by the consumer. To conquer this, sweet acidophilus milk was developed. The bacterium grants it a tangy flavour and thickened texture. This low fat content milk has a longer shelf life than customary milk. The creation of excellent aged milk items containing these probiotic is a significant test because of specific properties like quick corrosive creation from lactose and improvement of appropriate amount of volatile compound such as diacetyl and acetaldehyde and so forth.

To set it up, microorganism is vaccinated with clean skim milk and incubating at a reasonable temperature. The organisms develop gradually that devours lactose in the milk and gives a tart flavour. Precautionary measures must be taken to keep out unfamiliar organisms. After creation, the milk is exposed to sensory evaluation. The evaluation was done on an

appearance, taste, shading, flavour and in general adequacy on a 9 point hedonic scale (9 = like without question; 1 = dislike definitely). The sensory evaluation was led at room temperature on day 1 of its turn of events and day 6 after its stockpiling. From that onward, physicochemical test was done where the readied milk was assessed normally for treatable acidity and pH during its stockpiling up to 6 days with 1 day stretch. The treatable acidity was dictated by titrating 9 ml of arranged milk with 0.1N NaOH to the phenolphthalein end point and pH by embedding pH probe into sample. Then, the milk was evaluated for total viable number of *Lactobacillus acidophilus*. One ml of sample was diluted with 9 ml of saline solution and then serial dilution was prepared. They are utilized to check the total viable count per ml using MRS agar. It is essential to keep up the feasibility of microorganisms until the items are devoured in order to ensure delivery of sufficient number of live microbes, as indicated by global principles, the total viable counts in probiotic products. Most of the commercially accessible products have about 1% milk fat, giving around 110 calories for each 8 ounces (236 ml); protein (8 g) and calcium (about 30% of the suggested everyday recompense). It is imperative to keep this sort of milk chilled to limit bacterial action.

The Acidophilus milk has numerous medical advantages and is particularly known for avoidance of hypersensitivities. As a result of low fat content, it controls cholesterol level. It additionally helps in low glucose level issue and keeps up high energy levels. This milk is plentiful in vitamins such as K, B1 and folic acid. All of these vitamins help in the fortification of bones and muscles in the body, contributing to the immune system. When consumed with proper medication, it can be extremely useful to treat typhoid, migraine, urological disorder and infection and may reduce diarrhoea. It can advance gut wellbeing by expanding the amount of healthy bacteria in the intestine. This bacterium prevents the body from many immune issues by assaulting pathogens. It decreases viral diseases.

The Acidophilus milk may likewise have some side effects including: constipation, bloating, increased thirst and so forth. An expansion in stomach gas may happen but usually proceeded with continued treatment. This item may contain inactive ingredients which can cause hypersensitive responses or other issues. People with lactose intolerant should be aware of it, because some acidophilus products might contain lactose. In the event that any individual, who encounters side effects or a worsening of existing symptoms, should quit utilizing it. Acidophilus milk can help in reestablishing the balance between good and harmful bacteria in the intestine. Taken as a probiotics, acidophilus fills in as a dietary supplement that may profit an assortment of conditions.

N. Mathan (BU201539)

III B.Sc., Microbiology

Effect of Wine on Health

‘Fermentation’ plays a vital role in Biotechnology. Wine is an alcoholic drink typically made from fermented grapes. It also involves fermentation of additional crops including rice wine and other fruit wines such as plum, cherry, pomegranate, currant and elderberry. Effects of

wine on health care is felt because of its active ingredient alcohol, but consuming alcohol in small quantities that is standard drink decreases risk of heart disease, diabetes mellitus and early death. Drinking more than standard drink amount increases the risk of heart disease, high blood pressure, stroke and cancer. Use of excessive alcohol is the third leading cause of early death in US. According to systematic reviews and medical association, people who are non-drinkers should not start drinking wine. Positive medical benefits of wine consumption makes a distinction between moderate consumption and heavy drinking. In general, women absorb alcohol more quickly than men so their moderate levels of consumption may be lower than those for male of equal age.

Moderate Consumption is actually less than (150 ml) glass of wine per day for women and two glasses per day for men. Drinking enough causes a Blood Alcohol Concentration (BAC) of 0.03 % - 0.12 % and typically causes an overall improvement in mood, decreased anxiety and red appearance in the face. Such increasing BAC causes coma, life threatening respiratory problems and possibly fatal alcohol poisoning. Heavy alcohol consumption has been shown to have a damaging effect on the cellular processes that create bone tissue, and long term alcoholic consumption at high levels increases the frequency of fractures. Epidemiological studies have found a positive association between moderate alcohol consumption and increased Bone Mineral Density (BMD). 'The International Agency for Research and Cancer' of the World Health Organization (WHO) has classified alcohol as Group I Carcinogen. The study equated the cancer risk of consuming one bottle of wine per week to smoking five cigarettes per week for men or 10 for women. The main cause of heart attacks and pain of angina is the lack of oxygen caused by blood clots and athermanous plague build up in the arteries.

The alcohol in wine has anticoagulant properties that limit blood clotting by making the platelets in the blood less prone to stick together and reducing the levels of fibrin protein that binds them together. Red wine contains more polyphenols than white wine, and these could be protective against cardiovascular diseases. From overall context the excess level of wine consumption cause long term as well as short term health effects. Even wine has positive effects over health but only to those having moderate consumption. Most importantly research has suggested that the person who never drinks alcohol before should never start drinking it ever after whether it would be wine, beer, whisky, etc.

B. Navaneethakrishnan (BU181541)

III B.Sc., Microbiology

கொரொனா பெருந்தொற்றுக் குறள் பத்து

ஆழிகூழ் உலகின் குணதிசைத் தோன்றி
சீனத்தில் நிலைகொண்ட தீநுண்மி (1)

ஊஆன் தொடங்கி கலிபோர்னியா பரவி
மனிதம் சிதைத்தக் கொரொனா (2)

முகக்கவசமும் கைத்தாய்மையும் சமூக இடைவெளியும்
உயிர் காக்கும் முதல்மருந்து (3)

உண்ணற்க ஊண் அதிலும் நஞ்சுகொண்ட
உயிர்களை உண்ண வேண்டா (4)

நிலையற்றது என்றுணர்ந்து செல்வத்தைத் தந்துதவும்
நற்பண்பு உடையாரே அறவோர் (5)

நோய்த்தொற்றாளியோடு இருந்து தன்னுயிர் மதியாத
செவிலியரும் மருத்துவரும் இறையே (6)

உயர்ந்தோர் தாழ்ந்தோர் செல்வர் எளியர்
சமன் என்றுணர்த்திய தீநுண்மி (7)

உணவும் பண்டமும் இல்லா உலகில்
வயிறுகாய்ந்து அல்லல்படும் ஏழையர் (8)

உறவையும் சுற்றத்தாரையும் துறந்து தேசம்கடந்து
தனித்து ஏங்கும் அறிவர் (9)

தனிநபர்கட்டுப்பாடும் சுகாதாரமும் சத்துநிறை உணவும்
கொரொனாவை வெளியேற்றும் வழி (10)

முனைவர் க. மோகன்காந்தி
தமிழ் உதவிப் பேராசிரியர் (பிரிவு-1)

தந்தை - பிள்ளை

நீ என் ஜனனத்தைக்
குறித்து வைத்தாய்
நான் உன் மரணத்தை
அல்லவா குறித்து வைத்தேன்.

நீ எனக்குப் பிறப்புச்
சான்றிதழ் வாங்கினாய்
நான் உனக்கு இறப்புச்
சான்றிதழ் அல்லவா வாங்கினேன்.

நீ என்னைப் பள்ளிக்கு
அழைத்துச் சென்றாய்
நான் உன்னை கல்லூரிக்கு
அழைத்துச் சென்றேன்
புகைப்படமாக.

முனைவர் ம. சரளாதேவி
தமிழ் உதவிப் பேராசிரியர் (பிரிவு-2)

கைகழுவிய காலம்

கொரோனாவின் உருவத்திலிருந்து
அழகியமுகம் கொண்ட கடவுளும்
கோரமுகம் கொண்ட சாத்தானும்
ஒன்றாக பிரதி பலிக்கின்றன.

அழுக்கேறி சுழலும் உலகை புனித
நீரால் கழுவி புதுப்பித்திருக்கிறார் கடவுள்.

கடிகாரத்தில் நேரம் கூட்டி
அவசரத்தில் வாழ்க்கையைக் கழித்த மனிதர்கள்
அறைக்குள் அமர்த்தி
ஆசு வாசப்படுத்தப்பட்டார்கள்.

புலம் பெயர் தொழிலாளர்களைப் பசியெனும்
சவுக்கடிகளோடு நீள்பாதையில் இழுத்துச் செல்கிறன்

கோவில்களில் கதவுகளைப்பூட்டி
கடவுளை ஒய்வெடுக்க
கட்டாயப்படுத்துகிறான்.

இவ்வாறாக கடவுளின் கருணையும்
சாத்தானின் தண்டணையுமாய்
வாழ்ப்பழகிலிருக்கிறது மானுடம்.

திரு. லா. பிரகாஷ் ஜான்பால்
இயற்பியல் ஆய்வக உதவியாளர்

யார் அவன்

உணவு பொருட்களைப் பிறருக்கு உணவாக்கியவன்
இன்று, பூச்சி மருந்தைத் தனது உணவாக்கினான்...

கம்மா கரையில் நின்றவன்
இன்று, நாதியற்று நடுரோட்டில் நிற்கின்றான்...
அரிசி மூட்டைகளைத் தனது தோளில் சுமந்தவன்
இன்று, கடன் சுமையைச் சுமக்கின்றான்...
மம்முட்டியைக் கையில் ஏந்தியவன்
இன்று, திருவோட்டினைக் கையில் ஏந்துகின்றான்...
நிலத்தில் இறங்கி விவசாயம் செய்தவன்
இன்று, தலைநகரில் போராட்டம் செய்கின்றான்...
பருவமாற்றத்தை எண்ணி மனம் மகிழ்ந்தவன்
இன்று, விலைவாசியை எண்ணி விதைக்கக் கலங்கி நிற்கின்றான்...
பூமிதாய்க்குத் துணையாய் நின்றவன்
இன்று, மீளாதுயருடன் அனாதையாய் நிற்கின்றான்...
யார் அவன்? அவன்தான் உலகிற்கே சோறு போட்டவன்.

சா. செல்வகுமார் (AU190347)
இளங்கலை இயற்பியல் இரண்டாமாண்டு (பிரிவு-1)

தன்னம்பிக்கை

நீ முடிவு செய்யும் பாதை
கரடு முரடாக இருந்தாலும்
கடந்துவிடலாம்,
தன்னம்பிக்கை என்ற
துணைவன் நண்பனாக இருந்தால்...
நீ முயன்றால் தான் உன்பாதையில்
பூக்கள் மலரும்
உனக்கான இலக்கை நீ நிர்ணயம்செய்
அந்த இலக்கை நோக்கியே பயணம்செய்
வெற்றி என்பது
உன்னுடைய நிழல் போன்றது
அதை நீ தேடிப் போக வேண்டாம்
வெளிச்சத்தை நோக்கி
நீ பயணம்செய்
வெற்றி உன்னிடம் தானாக வந்து சேரும்...
மனிதா,
காற்றின்றி மூன்று நிமிடமும்,
நீரின்றி மூன்று நாட்களும்,
உணவின்றி முப்பது நாட்களும்,
உயிர்வாழலாம்
ஆனால்
உன் தன்னம்பிக்கை இன்றி
மூன்று நொடிகள்கூட
உன்னால் உயிர் வாழ முடியாது
உன்னையே நீ நம்பு

ஓர் நாள் உயர்வு நிச்சயம்
தன்னம்பிக்கை என்ற ஒற்றை நூல்
உன்னிடம் சரியாக இருந்தால்
வெற்றி என்னும் பட்டம்
உன்வசமே...

சா. வினோதினி (BU180717)
வணிகமேலாண்மை மூன்றாமாண்டு

பெண்ணியம்

கொடுப்பதை இருமடங்காகக் கொடுப்பவளே பெண்!
நான் இன்னும் மாறவில்லை
அக்னி பந்தாக...
சிறகுகள் முளைக்கத் தொடங்கும்
இளம் பட்டாம்பூச்சி கூட்டம் நாங்கள்
அதற்குள் சமூக சிறையில் சிக்கிவிட்டோம்
வலிகளை மட்டுமல்ல,
எங்கள் கனவுகளையும் மறைக்கத் தொடங்கிவிட்டோம்
அக்கறை இல்லா சமூகத்தைப் பார்த்து
நான் இன்னும் மாறவில்லை
அக்னி பந்தாக....
ஒரு முறை மட்டும் பயன்படுத்தி எறியும்
பிளாஸ்டிக் பை போல
எங்கள் அன்பை பயன்படுத்தி எறியும்
அவர்கள் மீது
நான் இன்னும் மாறவில்லை
அக்னி பந்தாக...

ஏ. சுவேதா (BU180263)
இளங்கலைக் கணிதவியல் மூன்றாமாண்டு (பிரிவு-2)

கானல் நீராய்ப் போயின

வெள்ளமாய் ஓடுகின்ற நீரோ
கானல் நீராய்ப் போயின...
ஏர் பூட்டி மண்ணை உழுது
நாற்று நட்டு, களைப் பரித்து
கொழுந்து விட்ட செல்லக் கண்மணியை
அறுவடை செய்து தன் உழைப்பைச் செலுத்துபவன் ஒருவன்
நிரியைப் போன்று தந்திரம் செய்து நெருப்பூட்டி
குளிர் காய்பவன் மற்றொருவன்
தானே அனைத்தையும் செய்வது போல்
மார்தட்டுபவன் மற்றொருவன்
முழு மூச்சை செலுத்தி உழைப்பவன் நிலை?
வெள்ளமாய் ஓடுகின்ற நீரோ,

கானல் நீராய்ப் போயின...

பூ. நம்பி (AU190403)
இளங்கலை வேதியியல் இரண்டாமாண்டு (பிரிவு-1)

தீம்புனல் ஊர் (வெண்பா)

ஆற்றுத்தா நீர்ஆரல் உண்டு கருங்குருகு
ஆர்ப்பும் சகடையன் வெம்மணல் தோய்ந்து
இகுளையால் செவ்விதழ் உய்த்து அகமகிழும்
இச்சிறப்பே எம்தீம்புனல் ஊர்.

கா. அன்பரசன் (BP200802)
முதலாமாண்டு முதுகலைத்தமிழ்

போகப்பொருள்

வறுமை எனும் வியாதி
வீரியம் கொள்ளும் போதெல்லாம்
இலவசமெனும் போகப்பொருளுக்குப்
பழக்கப்பட்டுக் கொண்டிருக்கிறது
ஐனநாயகம்.

ப. ஸ்ரீராம் (BP200804)
முதலாமாண்டு முதுகலைத்தமிழ்

அப்பாவுக்கு ஒரு கடிதம்

உதடொட்டிய பருக்கையுடன் அப்பாவுக்கொரு முத்தம்
உச்சி வெயில்ல களைச்சி வந்து
என்ன நீ தூக்க கத்தாழ செண்டு மணக்கும்
அடுத்த வீடு வரைக்கும்
என்ன தோலு மேலத் தூக்கி
மீசையை முறுக்கி விட்டு
வீதியில் நடப்பியே
சவாரி போக நான் கேட்க
நீ யானையாக மாற
உலா போக
எனக்கு உச்சிக்குளிரும்
உள்ளம் நிறையும்
உன் முதுகில் என்ன சுமந்து
உப்பு மூட்டை வித்தாயே ஞாபகமிருக்கா?
திருவிழாவுல குச்சி ஐசு கேட்டுக்
காணாம போனப்போ
திருட்டுப் பையமவன் எங்கேன்னு
பதறி அடிச்சு பள்ளத்தில் விழுந்து
எழுந்தாயே நினைவிருக்கா?
வந்த வழி தெரியாம நா முழிக்க
வாரித் தழுவி முத்தமிட
தேன் போல் இனித்தது உன் எச்சில்
தேவாமிர்தமும் கசந்தது
பட்ட மரமாட்டம் நீ உழைக்க
பட்டனத்துத் துணியில நானிருக்க
பார்த்து ரசித்தது ஞாபகமிருக்கா?
என்னமோ படிக்கரானு ஊரெல்லாம் எம்பாட்டு
படிக்கிறேன் படிக்கிறேன்னு தெருவெல்லாம் எம்பாட்டு
படிக்கப் போன மவன்
பக்குவமா வருவானு
காத்திருந்த உன் மனசு
நினைச்சு மாத்திரத்தில் உன்வீட்டு வாசல்ல
நான் நிக்க
உங்கண்ண நா துடைக்க
எங்கண்ண நீ துடைக்க
இப்போது
கண்கானா தேசத்துல
காக்கை குஞ்சாய்
நானெழுதும்
காகித கடுதாசி அப்பாவுக்கு
நான் இங்கு நலம்
நீ அங்கு நலமா.....
தலைவலினு நா படுத்தா
அம்மி அரைச்சு கசாயம் வெச்ச

அறக்க பறக்க
அடுத்த ஊருக்கு ஓடி போயி
வைத்தியர கூட்டி வருவ
உழைச்ச உன் ஓடம்பும் உழுத உம்மண்ணும்
என் சென்ட்டு பாட்டிலும் - இப்போ
பத்திரமாய் இருக்கா?

அ. கோகுல் (BU180832)
முன்றாமாண்டு இளங்கலைத்தமிழ்

கல்லூரிப் பயணம்

அன்பிற்காக நான் ஏங்கிக் கொண்டிருந்தேன். முதல் முறையாக நான் உன்னை சந்தித்தபோது உன்னிடம் நான் பேசவில்லை நீ தான் என்னிடம் முதல்முறையாக பேசினாய். அன்று ஒன்றும் தெரியவில்லை. சில நாட்கள் கழிந்தன இருவரும் பேசிக்கொண்டோம் பின்பு ஏதோ ஒரு காரணத்தினால் நீ கல்லூரிக்கு வரமுடியாது என்று கூறினாய். ஏனென்று தெரியவில்லை என் கண்களில் இருந்து கண்ணீர் வந்தது அன்று தான் நான் முழுமையாக உன்னை புரிந்துக்கொண்டேன். அன்றிலிருந்து என்னிடம் அன்பாக நடந்துகொண்டாய். எங்கு சென்றாலும் என்னுடன் தான் செல்வாய். வகுப்பறையில் அமரும்போது கூட என்பக்கத்தில்தான் உட்கார்ந்து கொண்டிருப்பாய். ஏதாவது ஒரு காரணத்தால் உன்னிடம் பேசவில்லை என்றால் என் இதயம் துடிக்கும் அதை அறிந்தாய், அந்த தருணத்தில் நட்பு இன்னும் அதிகமாக வளர்ச்சிப் பெற்றது. பின்பு உன்னுடைய கண்கள் என்னைப் பார்த்தால் அந்த கண்களில் இருந்து ஆயிரம் அர்த்தங்கள் புரியும். எப்போதும் நான் சந்தோஷமாக இருந்தால் தான் உனக்குப் பிடிக்கும் என்னுடைய முகம் கொஞ்சம் கோபமாக இருந்தால்கூட உனக்குப் பிடிக்காது,

ஏதோ ஒரு சில காரணத்தால்
உன்னிடம் பேச மறுத்தேன்
அன்று என் இதயம் கண்ணீர் வடித்தது
அது உனக்காக மட்டும் தான்
என் இதயத்தை நான்
உனக்காக பரிசாக கொடுக்கிறேன்
இந்த இதயத்தை மன்னித்து
ஏற்றுக்கொள்வாயாக...

ஏழேழு பிறவி எடுத்தாலும் இந்த இதயம் உனக்காகக் காத்துக் கொண்டிருக்கும் எதற்காக என்றால் உன் இதயம் எனக்கு சொந்தம் என்கிறவரைக்கும். நண்பா நீ என்னுடன் இருந்த அந்த நாட்களை நினைவுப்படுத்திப் பார்க்கவில்லை என்றாலும் நாம் இருவரும் கல்லூரியில் இருந்த அந்த நினைவுகள் ஒன்றேபோதும் என்னை வாழ வைக்க.

கா. சந்தோஷ்குமார் (BP190807)
இரண்டாமாண்டு முதுகலைத்தமிழ்

பெண் கல்வி

எப்படி வளர்ந்தேன் என நினையாமல்
ஏன் பிறந்தேன் என நினைக்க வைத்தவன் நீ
நான் துவண்டு போனேன்
என்று நினைத்தால் அது உன்
முட்டாள்தனம் - நான்
உயர நீயே படிக்கல்!
ஆவேசத்துடன் அடியெடுத்து
வைக்கும்போது உடைந்து போனாலும்
பொருட்படுத்தாமல் ஏறும் எனக்கு
உன்னோடு கோபம் என்று நினைக்காதே
யாவற்றையும் உன் மூலமாக
அறிந்துகொண்டதற்கு நன்றி கூறினாலும்
என்னைக் கட்டிப்போட நினைத்த
உன்னை திணற வைக்கத் தயாராகிறேன்
இதுவரை யாரும் எடுக்காத ஆயுதத்தோடு
வீழ்த்துவது என் நோக்கமல்ல - சமூகத்தில்
நான் வீழாமல் இருக்க.

க. தேவிபாலா (BR200303)
தமிழ்த்துறை
முனைவர் பட்ட ஆய்வாளர்

ஓய் சாமியோய்...

ஓய் சாமியோய்! என்ற சத்தம் சாலை ஓரத்தில் அமைந்துள்ள புளிய மரத்தின் அடியில் இருந்து ஓயாமல் கேட்டுக் கொண்டேயிருந்தது. ஊசி மணி விற்பனை செய்யக் கூடியவர்களின் கூட்டம். அவர்களுக்கென்று நிரந்தர வீடு என்று ஒன்று இல்லை. ஒவ்வொரு நாளைக்கும் ஒவ்வொரு இடத்தில் தங்குவார்கள்.

பள்ளிக்கூடத்தைப் பார்க்காத பிள்ளைகள், நாய் குட்டிப் போட்டது போன்ற சின்ன சின்ன பிள்ளைகள், தலை ஒரு வேஷமா? முகமெல்லாம் அழுக்குப் படிந்தும், சன்னல்போல அங்காங்கே கிழிந்து தொங்கும் துணியைப் போட்டுகிட்டு விளையாடிகிட்டு இருப்பார்கள்.

இரவு நேரத்தில் நிலாவைப் பார்த்துச் சோறு ஊட்டுவதும், காக்கா கதை சொல்லித் தூங்க வைக்கும் பழக்கமும் அவர்களிடம் இல்லை. சாலையோரத்தில் கல்லும், மண்ணும் நிறைந்த இடம் அதுதான் அக்குழந்தைகளுக்குத் தொட்டில். சாலையில் போகும் "பீம் பீம்" என்ற ஆரண் சத்தமும், டார்... டார்... வாகனங்களின் எரிச்சலும் தான் அம்மா பாடக்கூடிய தாலாட்டு. இவ்வாறுதான் இரவுகள் கழிந்தன அவர்களுக்கு.

"கீச்... கீச்... என்ற பறவையின் சத்தமும் சூரியனின் வெண்மையான ஒளியும் ஒருசேர வர அன்றைய பகல்பொழுது தொடங்கியது. ஓய் சாமியோய்! என்று உறங்கிக் கொண்டிருந்த பிள்ளைகளிடம் சொல்லி எழுப்பினர் ராக்காயியும், முக்கப்பனும். அந்தக்குழந்தைகளும் "திக்" என்று எழுந்து தூக்கக்

கலக்கத்துடன் கண்ணைத் துடைத்துக்கொண்டே அப்பா...! அம்மா...! என்று பின்னாடியே நாய்க்குட்டிப் போல ஓடினர்.

தோளில் அழுக்குப்படிந்த பையும், கையில் துப்பாக்கியும் எடுத்துக்கொண்டு அன்றைய உணவைத் தேடிச் சென்றனர். கரடு முரடான பாதை அடர்ந்த புதரை நோக்கித் தொடர்ந்தது அவர்களின் பயணம்.

போகும் வழியில் நெடுந்தூரத்தில் ஒரு ஆலமரம் தென்பட்டது. அது பார்ப்பதற்குத் தலைவிரி கோலத்தில் அமர்ந்திருக்கும் ஒரு பெண் மாதிரி விழுதுகளைத் தொங்கவிட்டுக் கொண்டிருந்தது. அந்த ஆலமரத்தின் அடிப்பக்கம் மிக பெரியதாகவும் பார்ப்பதற்கு முதிர்ந்த மரம்போல் காட்சியளித்தது. அந்தக் கிளைகள் பச்சைநிற ஆடையை அணிந்திருப்பதுபோல் புதிதாக துளிர்ந்த இலைகள் மரமெங்கும் ஜொலித்தது.

அந்த இலைகளுக்கு நடுவில் உயரமான கிளையில் பறந்து பறந்து களைத்துப்போன மைனா ஒன்று உட்கார்ந்திருந்தது. அந்த மரத்தை நோக்கிச் சென்றனர். கரடு முரடான பாதையில் நடந்து வந்த களைப்பால் ஐயோ! இவ்வளவு தூரம் நடந்தும் ஒன்னும் கிடைக்கவில்லையே என்று சோர்ந்து அமர்ந்தனர்.

நாய்க்குட்டிகள் போல் பின்னாடியே வந்த குழந்தைகள் அப்பா பசிக்குது அப்பா எப்ப மைனா வரும்? இப்ப வருமாப்பா? நீ துப்பாக்கியால் அத சுடுவியா? நீ சுடறது அது மேல விழுமா? என்று பேசிக்கொண்டே எதார்த்தமாக அந்த குழந்தைகள் உலகம் இப்பூமியைச் சுற்றுவதுபோல மரத்தைச் சுற்றி வந்தனர். கிளையில் இருந்த மைனா குழந்தைகளின் கண்களில் தென்பட்டது. அப்பா குருவி, குருவி என்று ஆனந்தமாக அப்பாவைக் கூப்பிட்டனர். எதோ... எதோ... என்று ஓடிவந்தான் மூக்கப்பன். அதோ இருக்குது என்று அடையாளம் காட்டியது அந்த குட்டிவாண்டு. உடனே மூக்கப்பன் தன் துப்பாக்கியைக் கையில் எடுத்து “ஓய் சாமியோய் டூப் என்று அந்த மைனாவைக் குறி வைத்துச் சுட்டான்.

துப்பாகியின் குண்டு சரியாக மைனாவின் கழுத்தில் சிக்கியது. கிளையில் இருந்த மைனா காற்றில் சிறகு அசைய தன் வரலாறுகளை ஒவ்வொரு கிளைக்கும் சொல்லிக்கொண்டே மண்ணை வந்தடைந்தது. மகிழ்ச்சியோடு அந்த மைனாவைக் கையில் எடுத்த மூக்கப்பன் ஓய் சாமியோய் என்று விண்ணைப் பார்த்து கைக்கூப்பி வணங்கினான். பின்னர் எடுத்துப் பையில் போட்டுக் கொண்டு வழக்கமான இடத்தை நோக்கி நடந்தனர் மூக்கப்பனும், ராக்காயியும் வந்து சேர்வதற்குள் தாமரை மலரும் நேரம் முடிந்து அல்லி மலரும் இருள் சூழ்ந்தது வழக்கமான இடத்தைப் பத்திரமாக அவர்கள் அடைந்தனர்.

அப்பா பசிக்குதுப்பா பசிக்குதுப்பா அழத்தொடங்கினர் ஏய் போய் அங்க உக்காரு... நான் கூப்பிடாமல் யாரும் வரக்கூடாது என்று பிள்ளைகளிடம் கோபமாகப் பேசிவிட்டு மைனாவை பக்குவமாகச் சுடத் தொடங்கினான் மூக்கப்பன். சுட்ட மைனாவின் கறியைத்துண்டு துண்டாக வெட்டி கரிபடிந்த சின்ன குண்டானில் போட்டான்.

வெற்றிலைப் பாக்கு போட்டு, அரைகுறையான ஆடையை அணிந்த ராக்காயி புளிய மரத்தின் அடியில் கரிபடிந்த குண்டானை வைத்து கறிக்குழம்புக்குத் தேவையானப் பொருட்களைப் போட்டு வேகவைத்துத் தன் குடும்பத்தோடு புளிய மரத்தடியில் வட்டமாக உட்கார்ந்து பகிர்ந்து உண்டாள். பின்னர் வாண்டில் ஒன்று அப்பா நாம ஆல மரத்தடியிலே சோறாக்கிச் சாப்பிட்டு இருக்கலாம்.

இவ்வளவு தூரம் எதுக்கு வரணும். அங்கே இருந்திருந்தா நாம சாப்பிட்டுத் தூங்கிருக்கலாம். அப்பா நம்ப வீடு எங்க இருக்குது தூரமா இருக்குதா தாத்தா பாட்டி அங்க இருக்காங்களா.. என்ற கேள்வியை எழுப்பினான்.

இல்லடாக் குட்டி அது ஒரு பெரிய கதை, தாத்தா பாட்டி சொந்தகாரங்களோடு சந்தோஷமாக இருந்தோம். தாத்தாவையும், பாட்டியையும் மரத்தடியிலே விட்டுட்டு மத்தவங்க எல்லாரும் வேட்டைக்குப் போவோம். அவங்க மரத்தடியிலே கட்டில் போட்டு உட்கார்ந்திருப்பாங்க அந்தக் கட்டில் காலில் வெள்ளையும் கருப்பும் கலந்த பூனைய சங்கிலில் கட்டி அதுக்குப் பால் ஊத்தினு இருக்கிறதுதான் அவங்க வேலை. தினம் வேட்டைக்குப் போகும்போது புறா, மைனான்னு நிறைய குருவிங்கள வேட்டையாடுவோம். புறா, மைனா கறியைச் சாப்பிட்டா ஒடம்புக்கு நல்லது. அதனால் யாராவது பணத்தைக் கொடுத்து விலைக்கு வாங்குவாங்க. அந்தப் பணத்துல இந்த பூனைக்குப் பால் வாங்கவும் பாட்டிக்கு வெத்தல பாக்கு வாங்கவும் சரியாக இருக்கும். ஒருநாள் நானும் அம்மாவும் வேட்டைக்குப் போனோம். வற்றத்துக்குள்ள இருட்டிடுச்சி அதனால் தாத்தா பாட்டி இருக்கும் இடத்துக்கு வரமுடியல அங்கே வேறு இடத்தில் தங்கிட்டோம். மறுநாள் காலையில் தாத்தா பாட்டி இருக்கும் இடத்திற்கு வந்தோம். எங்களை நம்ப சொந்தக்காரங்க சேத்திக்கல. நம்ப வழக்கப்படி பார்த்தா ஒருநாள் கூட கூட்டத்தை விட்டு தனியாகத் தங்கக்கூடாது. அப்படி தங்கிட்டா நாங்க ஏதோ தப்பு செஞ்சிட்டோம்னு நினைச்சி கூட்டத்திலிருந்து ஒதுக்கி வெச்சிருவாங்க. அப்புறம் அவர்களை விட்டு தனியாக போயிருனும். அதனால் நமக்குனு சொந்த வீடு இல்லை. ஊர் ஊராக போய் வாழனுங்கிறது நம்ப மாதிரியான குருவிக்காரங்களுக்கு அந்த ஆண்டவன் தந்த சாபக்கேடு. அதனாலதான் நாம இப்படி ரோட்டோரம் மரத்தடியில் வாழ்கிறோம் என்று தன் பாரத்தை இறக்கினான் மூக்கப்பன்.

மூக்கப்பன் வேட்டைத்தொழில் மட்டும் செய்யாமல் வேட்டை நேரம் போக மற்ற நேரத்தில் களைப்பைத் தீர்க்க கூடிய வகையில் ஒரே இடத்தில் அமர்ந்து ஊசி, நரம்பு நூலைக்கொண்டு வண்ண வண்ண மணிகுண்டுகளால் ஆன கால் கொலுசைச் செய்து அதனைக் குறைந்த விலைக்கு விற்பனை செய்து வாழ்க்கைக்குத் தேவையான பொருட்களைப் பூர்த்தி செய்து தன் குடும்பத்துடன் மகிழ்ச்சியாக வாழ்ந்தான்.

சித்திரைத் திருவிழா நெருங்கியது வேப்பிலையைத் தேங்காய் நாரால் தயாரிக்கப்பட்ட கயிற்றில் கட்டி அதனை ஊரின் நடுவில் காப்பினைக் கட்டுவார் ஊர் தோட்டி. அப்படி காப்பினைக் கட்டிய பிறகு ஊர் மக்கள் யாரும் ஊரை விட்டு வெளியில் தங்கக் கூடாது என்பது ஊர் வழக்கம்.

திருவிழாவை முன்னிட்டு ஊர் கோலாகலமாகத் தயாராகிக் கொண்டிருந்தது. சீரியல் செட், லைட் என ஜகஜோதியாக இருந்தது. அந்த திருவிழாவில் ஊசிமணி விற்பவர்களும் கலந்து கொண்டனர். அவர்கள் தன் குழந்தைகளுடன் விழா நடக்கும் கோவில் அருகில் உள்ள இடத்தில் வண்ண வண்ண மணிகுண்டுகளால் செய்யப்பட்ட கொலுசுகளை விற்பனை செய்வதற்காக கிழிந்தத் தார்ப்பையைத் தரையில் போட்டு கொலுசை வட்ட வட்டமாக ஒவ்வொரு ஜோடியையும் வைத்தனர். மக்களின் கண்ணைக் கவர்கின்ற வகையில் வண்ண வண்ண மணிகுண்டுகள் நட்சத்திரங்கள் போல மின்னியன.

வேப்பிலை மரம், அதன் அருகில் கோவில் பார்ப்பதற்கு தேவலோகம் மாதிரியான கடைகள் என மக்கள் கூட்டமும் அலைமோதியது. மக்கள் கூட்டம் கொஞ்சம்

கொஞ்சமாக அதிகரிக்க ஆரம்பித்தது. இரங்கராட்டினம் குழந்தைகளின் புன்னகையோடு சுற்றத் தொடங்கியது. மக்களின் கூட்டம் கொசுக்கள் மொய்ப்பது போல ஒவ்வொரு கடையையும் சுற்றி மொய்த்தது. பந்து விற்பவர் தன்னுடைய தொண்டை காய கூவி கூவி விற்பனை செய்தார். பலூன் விற்பவர் தன்னுடைய மூச்சை இழுத்துப் பலூனின் வயிற்றுக் காற்றால் நிரப்பி குழந்தைகளின் கண்களைக் கவர்ந்தனர்.

குருவிகாரியின் மகன் கையில் ஊக்கி (ஊசி) கொத்தை எடுத்துக் கொண்டு ஒவ்வொருவரிடமும் சென்று அக்கா ஊக்கியை வாங்கிக்கோங்கக்கா அக்கா... அக்கா... ஜோடி பத்து ரூபாய்க்கா என்று ஒவ்வொருவரிடமும் சென்று கெஞ்சினான். யாருமே வாங்கல என்ன செய்வது என்ற கவலையுடன் அம்மா ராக்காயியைக் தேடிப் போனான்.

அம்மா அவனைக் கண்டதும், “ஏய் போடா போ, போயி இந்த ஊக்கியை எல்லாம் வித்துட்டு வா அப்ப தான் உனக்கு சோறு போடுவே என்று விரட்டியடித்தாள். கண்களின் கண்ணீரும் அழுக்குப் படிந்த சட்டையும், சளிப்படிந்த மூக்கும், வெளுத்த முகமும், கத்திரிக்கோல் படாத தலையும் கொண்டவன் மீண்டும் கையில் ஊக்கியை எடுத்துக்கொண்டு அக்கா வாங்கிக்கோங்கா, அண்ணா வாங்கிக்கோங்க... என்று ஒவ்வொருத்தர் பின்னாடியே தரிசனம் செய்யும் இடம் வரைச் சென்று கெஞ்சினான். அப்பவும் யாருமே வாங்கவில்லை “போ சனினை” என்று திட்டி விரட்டினார்.

அப்பாவியான முகத்தோடு கோவிலை விட்டு வெளியேறினான். கோவிலுக்கு வெளியில் இளைஞர்கள் கூட்டம் கூட்டமாக கடைகளைச் சுற்றி சுற்றி வந்தவண்ணமிருந்த அழகை மேலும் அழகூட்டக் கண்ணாடியை எல்லாரும் ஒரே மாதிரியாக அணிந்திருந்தனர். கிழிந்த பேண்டும், ஒரு பக்கம் முடி வெட்டியும், மறுபக்கம் வெட்டாமலும் பார்ப்பதற்கு விகாரமாக காட்சியளித்தனர் அவர்களில் சிலர். அவர்களிடமும் சென்று அண்ணா வாங்கிக்கோங்கா, அண்ணா வாங்கிக்கோங்கா எனக்கெஞ்சினான். “டேய் தம்பி போடா டேய்” நானே என் காதலியை கானலனு தேடினு இருக்கேன் இவன் வேற வந்து என்னைத் தொந்தரவு செய்யிறான் என்று விரட்டி விட்டான் ஒருத்தான்.

“ஆளாளுக்கு ஒரு கவலையினா இந்த இளைஞர்களுக்கு ஒரு கவலை” என்று நினைத்து “நானு எப்ப இந்த மாதிரி கண்ணாடி போடறது” என்று யோசனை தோன்றியது அவனுக்கு “அருக்க மட்டாதவனுக்கு 58 அருவா” என்ற கிராமத்து பழமொழியை நினைவூட்டி நடக்காததை ஏன் நினைக்க வேண்டும் என்று மனதை சமாதானம் செய்து மீண்டும் ஊசியை விற்க ஆரம்பித்தான். போகும்போது ஒவ்வொரு கடையையும் உற்று நோக்கினான். மொம்மைகள் நிறைந்த கடையைப் பார்த்தான். ஒவ்வொரு மொம்மையாக வரிசையாகப் பார்த்தவனுக்கு “மைனா”வைப் போல இருக்கிறதே என்று ஆச்சரியப்பட்டான்.

பட்டாம்பூச்சி மொம்மையைப் பார்த்தான். நாம சின்ன வயசுல பிடிக்க போனபோது பறந்து போயிருச்சே அந்த பட்டாம்பூச்சியா இருக்குமோ... அடுத்து முயல் மொம்மையை பார்த்தான். இது அப்பாவின் குறிக்குத் தப்பி ஓடிய முயல்தான் இங்க வந்து உட்காந்துனு இருக்குதோ என்று ஒவ்வொரு மொம்மையையும் பார்த்து வைத்துவிட்டு அடுத்த கடையை நோக்கி நகர்ந்தான்.

அடுத்தது இரங்கராட்டினக்கடை அங்கு குழந்தைகள் பெரியவர்கள் எல்லாம் ராட்டினத்தொட்டில் நிறைய அமர்ந்திருந்தனர். அதனைத் தூரத்திலிருந்து வேடிக்கைப்பார்க்கிறான். இராட்டினம் சுற்ற ஆரம்பித்தது. இராட்டினம் வேகமாக சுற்ற இராட்டினத்தில் அமர்ந்திருந்த அழகான உடை அணிந்திருக்கும் பெண்களும், உற்சாகமாக இருக்கும் குழந்தைகளும் கீழே சுற்றும்போது மகிழ்ச்சியாகவும் மேலே சுற்றி வரும்போது பயத்தை வெளிகாட்டுவதற்காகக் கத்தித் தன்னுடைய பயத்தைப் போக்கினர்.

அதைப் பார்த்ததும் ஆசை சிறுவனைப் பிடித்துக்கொண்டது. ஏக்கத்துடன் அந்த கடையை விட்டு வெளியேறினான். கடவுள் என்னை மட்டும் ஏன் இப்படி படைத்திருக்கலாம். நான் முன்பிறவியில் செய்த பாவமா... இல்லை இவர்களுக்குப் பிள்ளையாகப் பிறந்ததனால் இவ்வளவு கஷ்டம் படுகிறேனா என்று தனக்குத் தானே பேசிக்கொண்டே சென்றானோ என்னவோ? பாவம் எதிரே வருவர்களிடம் அக்கா ஊக்கி வாங்கிக் கொடுக்கக்கா என்று மீண்டும் பின்னாடியே சென்றான். அப்போது அவனை ஒரு பெரியவர் அழைத்தார். ரொம்ப நேரமாக அவனை கவனித்துக்கொண்டிருந்தவரின் அருகில் சென்ற சிறுவன் தாத்தா என்று அழைத்தான். அந்த வார்த்தையைக் கேட்டதும் அவர் கண்களிலிருந்து கண்ணீர் வழிந்தோடியது.

தாத்தா ஏன் அழறீங்க. இல்லப்பா தம்பி எனக்கும் உன் வயசில் பேரப் பிள்ளைகள் இருக்கும். ஆனால் அதுங்க சின்ன வயசாக இருக்கும்போதே ஒதுக்கி வெச்சிட்டேன். அதுங்க எங்க இருக்குதோ தெரியவில்லை உன்னை பார்த்ததும் அதுங்க ஞாபகம் வந்துருச்சி நீயும் என் பேரன்தான் இதோ 100 ரூபாய் வெச்சிக்கோ என்றார். வேணாம் தாத்தா அம்மா அடிப்பாங்க “உழைச்சி சம்பாதிக்கிற காசு தான் ஒடம்புள ஒட்டுமா” அம்மா சொல்லி இருக்காங்க. அதனால் இந்த ஊசியை வாங்கிட்டு 10 ரூபாய் கொடுங்க போதும் என்று நேர்மையாகப் பேசினான். எனக்கும் உங்களைப் பார்த்தால் எங்க தாத்தா ஞாபகம் வருது. அவரும் எங்களை ஒதுக்கி வெச்சிட்டாரு அதனால் நாங்களும் தனியாக இருக்கிறோம். தாத்தா பாட்டியைப் பார்க்கலாம்னு ஆசையாக இருக்குது என்னாப்பன்றது எல்லாம் என் தலையெழுத்து என்று வருந்தினான்.

சரி பரவாயில்ல இந்த பணத்தை வெச்சிக்கோ என்று வலுகட்டாயமாகச் சிறுவனின் ஜோப்பியில் போட்டார் முதியவர். ரொம்ப நன்றி தாத்தா என்று சொல்லிவிட்டுப் பணம் வாங்கன மகிழ்ச்சியில் “ஓய் சாமியோ, ஓய் சாமியோய்” எனக் கத்திக்கொண்டே இரங்கராட்டினத்தில் உட்காரலாம் என்ற கனவோடு அம்மாவை நோக்கி ஓடினான். அம்மா... அம்மா... என்று அழைத்து என்னிடம் இவ்வளவு பணம் இருக்குதுமா என்று சொன்னான். “டேய் உனக்கு ஏதுடா இவ்வளவு பணம் எங்க திருடினு வந்த என்று சொல்லி அடித்தாள் அம்மா. நான் திருடலமா... திருடலமா... என்று சொல்லிக்கொண்டே அழுதான்.

பின்ன “உனக்கு இவ்வளவு பணம் எப்படி வந்துச்சி” என்று நிதானமாகக் கேட்டாள். அம்மா நான் ஊசி வித்தினு இருந்த அப்ப ஒரு தாத்தா கூப்பிட்டு இந்த பணத்தைத் தந்தார். அப்படினா அந்த தாத்தாவை காட்டு என்று அழைத்து வந்தாள். ராக்காயி அந்த சிறுவனும் தாத்தா இருக்கும் இடத்திற்கு வந்து இருவரும் அந்த பெரியவரைப் பார்த்தனர். அவரைப் பார்த்ததும் ராக்காயி மாமா என்று கூப்பிட்டு ஓரமாகப் பணிந்து நின்றாள். அந்த முதியவருக்கு ஒரே அதிர்ச்சியாக இருந்தது. நீயா? எனக் கூறிக் கண் கலங்கினார் அது என்

பேரபிள்ளையா என்று சொல்லிச் சிறுவனைக் கட்டியணைத்தார். சிறுவன் அம்மா இவரை உனக்க முன்னடியே தெரியுமா? என்று வினாவினான். இது... இது... உன்னுடைய தாத்தா. அம்மா உண்மையாவா சொல்லுற என்று ஆனந்தத்தில் முதியவரைத் தழுவினான் சிறுவன்.

அப்போது வேட்டைக்குச் சென்றிருந்த மூக்கப்பனும் அங்கு வந்தான். எங்க இவங்கள் யாரையும் காணோம்? எங்க போயிருப்பாங்க என்று தேடினான். கொஞ்ச நேரத்திற்குப் பிறகு ராக்காயியும், குழந்தையும் கண்ணில் தென்பட்டனர். அவர்களை நோக்கி நடந்தவனுக்கு ஆனந்தம் பொங்கி வழிந்தது. அப்பா என்று கட்டியணைத்துக் கொண்டான். இவ்வளவு நாளா எங்கப்பா இருந்தீங்க என்று வினவினான்.

“அது இருக்கட்டும் தம்பி இராட்டினத்தில் உட்காருகிறீர் ஆசைப்படான். அவன் ஆசையை நிறவேத்து” என்று ராக்காயியோடு பிள்ளைகளையும் அனுப்பினான். அவர்கள் இரங்கராட்டினத்தில் உட்கார சீட்டு வாங்கும் வரிசையில் நின்றனர். வரிசையில் வருவதைக் கண்டு “துருநாற்றம் துருநாற்றம்” என்று அவர்களை உதாசினம் செய்து இரங்கராட்டினத்தில் உட்கார வராமல் மக்கள் கூட்டம் களைந்தது. அதுவரைக்கும் நீ நான் எனப் போட்டிப் போட்டுக்கொண்டிருந்த மக்கள் இந்தச் சிறுவர்களையும் ராக்காயியையும் பார்த்ததும் இரங்கராட்டினத்தை விரும்பாமல் சென்றனர்.

இதனைக் கவனித்த இரங்கராட்டின உரிமையாளர், “ஏய் போங்க உங்களை யாரு வரச் சொன்னது? போங்க... போங்க.... என விரட்டினார். ராக்காயி கெஞ்சினா பையனின் ஆசையை நிறவேத்துங்க என்ற அவளது விருப்பத்தைப் புரிந்துக்கொண்டார் உரிமையாளர். சரி வாங்க வந்து உட்காருங்க என்று சொன்னதும் தாயும் பிள்ளையும் இராட்டினத்தில் உட்கார்ந்தனர். இராட்டினம் சுற்ற ஆரபித்தது. கீழிருந்து மேலே வேகமாக சுற்றியதும் சிறுவர்கள் மகிழ்ச்சியால் கத்தினர். இதுவரைக்கும் வாழ்க்கையில் அடையாத ஆனந்தத்தை அடைந்தனர் அந்த வாண்டுகள்.

த. சர்மிளா (BP190801)
இரண்டாமாண்டு முதுகலைத் தமிழ்

கொரொனா வைரசும் காடழிப்பும்; விடை தெரிந்தும் தீர்வு காணப்படாத புதிர்கள்

சில நூற்றாண்டுகளுக்கு முன்பு இந்தியா உள்ளிட்ட நாடுகளில் ஸ்பானியக் காய்ச்சல் எனும் நோய்த்தொற்று உலகையே அச்சுறுத்தியிருந்தது. இந்தியா சுதந்திரம் பெற்றதற்கு இதுவும் ஒரு காரணம். அதற்குப் பிறகும் வேறு எந்த நோயும் இந்த அளவிற்கு வீரியத்துடன் பரவவில்லை. எய்ட்ஸ், எபோலா போன்றவை உலகளவில் நோய்த்தொற்றாக மாறவில்லை. ஆனால் இந்த ஆண்டின் (2020) தொடக்கம் முதல் உலகைச் சிறிது சிறிதாக முடக்கி வந்துள்ள கொரொனா வைரசு, ஸ்பானியக் காய்ச்சலுக்குப் பிந்தைய மிகப் பெரிய நோய்த்தொற்றாகக் கருதப்படுகிறது.

தோற்றம்

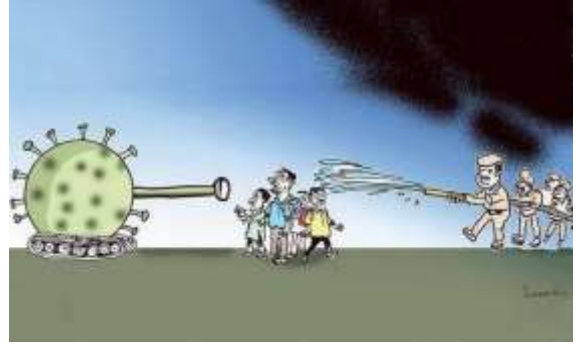
கொரொனாவின் தோற்றம் எது, அது எப்படி உருவாகியிருக்கும், எப்படி பரவியிருக்கும்? உண்மையிலேயே ஊகான் நகரத்தில் பெரும் இறைச்சிச் சந்தை உண்டு. அங்கு வளர்ப்பு இறைச்சி மட்டுமின்றி, காட்டுயிர்கள் இறைச்சியும் விற்கப்படுகின்றன. பல வகை காட்டு விலங்குகளைப் பிடித்து அதனை உயிருடன் இறைச்சியாகவும் விற்கிறார்கள்.



அதேவேளையில் வீட்டு விலங்குகளும், காட்டு விலங்குகளும் நெருக்கமாக வைத்திருப்பார்கள். இந்தப் பின்னணியில் காட்டுயிர்களுக்கு ஏற்பட்ட உளவியல் நெருக்கடி, சுகாதாரமற்ற பராமரிப்பு ஆகியவற்றால் அவற்றின் உடலிலிருந்து சிதறுப்பரவல் மூலமாக வளர்ப்புக் கால்நடைகளுக்கு நாவல் கொரொனா வைரசு பரவியிருக்கலாம் என்று கருதப்படுகிறது. இப்படி அந்தச்

சந்தைக்களுக்கு வந்த காட்டுயிர் விலங்கு எறும்புத்தின்னி, மரநாய் ஆகியவற்றில் ஒன்றாக இருக்கலாம். அந்த காட்டு விலங்கிற்கு வெளவால்கள் மூலம் வைரசு பரவியிருக்கலாம் என்று கருதப்படுகிறது.

இந்த கொரொனா வைரசு பற்றி நாம் கடந்த ஒரு ஆண்டாகத்தான் தெரியும், ஆனால் இந்த வைரசு திட்டவட்டமாக எங்கிருந்து தோன்றியது என்று இன்னமும் நிரூபிக்கப்படவில்லை. வெளவால்களின் உடலில் உள்ள சார்ஸ் நோய்க்குக் காரணமான கொரொனா வைரசு வகையை, நாவல் கொரொனா வைரசு வகையானது 76 சதவீதம் ஒத்திருப்பதால், வெளவால்களே நாவல் கொரொனா வைரசு தேக்கியாக இருக்க வேண்டுமெனக் கருதப்படுகிறது.



கொரொனா வைரசுக்கும் சுற்றுச் சூழலுக்கும் தொடர்பு இதோடு நின்று விடுவதில்லை. இதெல்லாம் கொரொனா வைரசியின் அடிப்படை மட்டுமே. அதாவது ஒரு எரிமலையின் துகளைப் போன்றது. நிஜக்கதை இனிமேல் தான் தொடங்குகிறது. அது ஒரு ஆழமான வெப்பக்குழம்பு.

“கொரொனாவைப் பரப்பினான்
பிணங்களை நிரப்பினான்
மக்களை நொருக்கினான்
பொருளாதாரத்தைச் சுருக்கினான்
பணத்திற்குப் பஞ்சம்
கொரொனா பெயரில் லஞ்சம்
வாடியதோ மக்கள் நெஞ்சம்”

இந்த நோய் பரவியதற்குக் காரணம் மனிதனே. மனிதன் விலங்குகள் வாழும் இடங்களை அழித்து, அதனை நாசம் செய்கின்றான். மனிதர்களுக்கும் விலங்குகளுக்கும் உள்ள இடைவெளி குறைகிறது. இதுவரை சென்றிராத சூழலியல் தொகுதிகளுக்குள் எல்லாம் ஆழமாக நாம் ஊடுருவிவிட்டோம்

என்கிறார் அமெரிக்காவின் மூத்த வைரசு ஆராய்ச்சியாளர் டென்னிஸ் காரெல். மஞ்சள் காய்ச்சல், ஸிகா காய்ச்சல், டெங்கு, சிக்கன் குன்யா, எபோலா, ரேபிஸ், ராக்கி மலை புள்ளிக் காய்ச்சல், தூக்க நோய், ஹன்டா வைரசு, யானைக்கால் நோய் மலேரியா இந்த நோய்கள் அனைத்தும் தோன்றியதற்கு ஒற்றைக் காரணம் காடழிப்புதான் என்கிறார் மருத்துவரும் பிரபல அறிவியல் எழுத்தாளருமான ரத்னா.

மேற்கண்ட நோய்களில் பெரும்பாலானவை கடந்த நூற்றாண்டில் மனிதர்களை ஆட்டிப்படைத்தவை. இந்த நோய்களுக்கான அடிப்படைக் காரணம் குறித்தும், நூற்றாண்டின் முதல் 20 ஆண்டுகளில் பரவிய மிக மோசமான நோய்த்தொற்றுக் குறித்தும் ஆராய்ச்சிகள் நடைபெற்றிருக்கின்றன.

சார்ஸ் - 2002

மெர்ஸ் - 2012

எபோலா - 2013

ஸிகா - 2015

போன்ற நோய்கள் சமீப காலத்தில் பரவியிருக்கும் நிலையில், வைரஸ் ஆராய்ச்சியாளர்கள், அறிவியலாளர்கள் அடுத்துவரக்கூடிய பெருந்தொற்றுக் குறித்து எச்சரித்துக் கொண்டேதான் இருந்தார்கள். ஆனால் இது யாரும் போதிய கவனம் செலுத்தவில்லை. மற்றொரு புறம் காடுகளை, இயற்கை வளங்களைத் தொந்தரவு செய்யாமல் இருப்பது குறித்து சுற்றுச்சூழல் ஆராய்ச்சியாளர்களும் வலியுறுத்திவந்ததை ஆட்சியாளர்களும் அறிவியல் துறையினரும் செவிமடுக்கவில்லையே என்ற கேள்வியும் எழுகிறது. மனித குலம் பலவகையான நோய்களைச் சந்தித்திருக்கிறது. ஆனால், காடுகள் அழிப்பு இன்றும் குறையவில்லையே.

நவீன அறிவியல், அதன் விளைவாகத் தொழிற்புரட்சி தொடங்கும்வரை, மனிதன் காடுகளை வளங்களை கட்டுமீறி அழிக்கவில்லை. அதற்குப் பின்னரே அவற்றை அழிக்கத் தொடங்கினான். ஐரோப்பிய நாடுகளில் தொழில்புரட்சி காரணமாக அந்த நாடுகளில் நிர்வகித்து வந்த அரசுகளும் லாபம் மீது பெருவெறி கொள்ளத் தொடங்கின. தொழில்நுட்பங்களுக்கு மூலப்பொருள் தேவைப்பட்டது. அதற்காக மனித வளம் நிறைந்திருந்த ஆப்பிரிக்க, ஆசிய, தென்அமெரிக்கா நாடுகளைக் காலனி ஆட்சியாளர்கள் அடிமைப்படுத்தத் தொடங்கினார்கள்.

அன்று முதல் இன்று வரை காடுகள் தொடர்ந்து அழிக்கப்பட்டுக்கொண்டேதான் இருக்கின்றன. தொழிற்புரட்சி ஏற்றுமதிக்காகப் பல காடுகளை அழித்து அங்கு இரயில் பாதையும், நான்கு ஐந்து பாதையையும் அமைத்தார்கள். காடுகளுக்குள்



உறங்கிக்கிடக்கும் மரங்கள், கனிமங்கள் பெருமுதலாளிகள் நிறுவனங்களின் அடிப்படை மூலப்பொருள்களாக இருக்கின்றன. இப்படிக்காடுகள் அழிக்கப்படுவதால் ஏற்படும் பின்விளைவுகளைப் பற்றிய கவலை நம்மில்

பெரும்பாலோருக்கு இல்லை. அதன்மூலம் கிடைக்கும் மூலதனமற்ற லாபத்தில் மட்டுமே அரசும் நிறுவனங்களும் கவனமாக இருக்கின்றன.

அமேசான் அழிக்கப்படுவதன் தொடர்ச்சியாகவே ஸிகா வைரஸைப் பரப்பும் ஏடிஸ் எஜிப்தி கொசுக்களின் பரவல் அதிகரித்தது. அந்த வைரஸ் நோய் பிரேசிலில் கருவிலுள்ள குழந்தைகளின் மூளை வளர்ச்சியைத் தடுத்தது நமக்குத் தெரியாத செய்தியல்ல.

ஆப்பிரிக்காவில் காடுகள் அழிக்கப்பட்டதன் தொடர்ச்சியாகவே வெளவால்களிடம் இருந்த எபோலா வைரசு மக்களைப் பலி கொள்ளத் தொடங்கியது.

இயற்கையை அழிக்கும் மனிதன் செயல்பாடுகள், காட்டுயிர் வாழிடங்களில் மனித ஊடுருவல் போன்றவையே புதுப்புது நோய்த் தொற்றுப் பரவலுக்கு அடிப்படைக் காரணம். காடுகளைத் தொந்தரவு செய்யும் மனிதச் செயல்பாடுகளை நிறுத்தினால் மட்டுமே, இதுபோன்ற புதிய கிருமிகள் எதிர்காலத்தில் தொற்றாமல் இருப்பதை உறுதி செய்யமுடியும்.

இந்த இடத்தில் புகழ்பெற்ற செவ்விந்தியத் தலைவர் சியாட்டிலினுடைய உரையின் ஒரு பகுதியைக் கூறுவது பொருத்தமாக இருக்கும். எப்படி நம் உடலின் அனைத்துப் பகுதிகளையும் ரத்தம் இணைக்கிறதோ, அதுபோல் உலகில் உள்ள அனைத்தும் ஒன்றுடன் ஒன்று பிணைக்கப்பட்டுள்ளன. வாழ்க்கை என்ற வலையை நாம் நெய்யவில்லை ஒரு சிறு பகுதி மட்டுமே நாம் அந்த வலைக்கு நாம் என்னவெல்லாம் செய்கிறோமோ அதெல்லாமே நமக்கு நாமே செய்துகொள்பவைதான்.

த. சத்தியமூர்த்தி (AU190416)
இளங்கலை வேதியியல் இரண்டாமாண்டு (பிரிவு-1)

மித்திர வண்ணன்

அழகு மிகுந்து சற்று தேஜசுடன் காணப்பட்டான் மித்திர வண்ணன். ஏதோ சத்தம் கேட்டு தூக்கத்தில் இருந்த விழித்து நடப்பதை கவனிக்க தொடங்கினான். வானத்தில் இருந்து வருவதைப்போல் மேலிருந்து குதித்து, அங்கு திருடிக்கொண்டிருந்தவர்களை அடித்து உதைத்து கட்டிவைத்தான் ஒரு மாவீரன். அவன் தன் முகத்தைத் துணி கொண்டு மறைத்திருந்தான். அம்மாவீரனின் முகத்தைக் காண வேண்டும் என மித்திர வண்ணனுக்குத் தோன்றியது. சண்டையின் இறுதியில் மாவீரனின் கண்களை மட்டுமே மித்திர வண்ணனால் காணமுடிந்தது. மாவீரன் தன்னை யாரும் கவனிக்கவில்லை என நினைத்து அங்கிருந்து சென்றுவிட்டான். ஆனால் மாவீரனின் நினைவாகவே இரவு முழுவதையும் கழித்தான் மித்திர வண்ணன். காலையில் அத்திருடர்களை அரசபை காவலர்களிடம் மக்கள் ஒப்படைத்தனர். அரசபையில் அத்திருடர்களுக்குத் தக்கத் தண்டனை வழங்கப்பட்டது.

இது மதுரலிங்கலூர் என்ற நாட்டை ஆளும் பேரரசர் விகடனேசனின் அரசவை. அதில் மந்திரிகள், மக்கள், அரசர், இளவரசி என அனைவரும் இருந்தனர். அரசியின் மறைவினால் அரசரின் பிரியத்துடனும், மிகுந்த அன்புடனும் வளர்க்கப்பட்டவள் இளவரசி கண்ணுக்கினியாள். நாட்டிலேயே மிகுந்த பேரழகி.

மதுரலிங்கலூர் அழகுக்கும், வளமைக்கும் பெயர் போனது. கொட்டும் உயர அருவி, அதில் பிரிதிபலிக்கும் அழகு சிற்பங்கள் மற்றும் வண்ண வண்ணமான பூக்கள் என அவ்வூரில் பிரமிப்பு கொட்டிக்கிடந்தது. வானவில்லின் நடுவே பாடிக்கொண்டு, தென்றலுடன் போட்டிப்போட்டு கொண்டு பறந்து சென்றன பறவைகள். மதுரலிங்கலூரின் அழகில் விழுந்த மித்திர வண்ணன் அங்கேயே தங்கிவிட்டான். ஆனால் அம்மாவீரன் யார், அவனை பார்க்கவேண்டும் என்ற எண்ணம் மட்டும் மித்திர வண்ணனுக்குள் அதிகரித்தது.

அரசபையில் தினமும் மித்திர வண்ணன் மாவீரனைப்பற்றி கேள்விப்பட்டான். நாளுக்குநாள் மாவீரனின் புகழ் நாடு முழுவதும் பரவியது. இரவில் நடக்கும் திருட்டைக் கண்டுபிடித்து மக்களிடம் ஒப்படைப்பான் மாவீரன். மித்திர வண்ணனுக்கோ அம்மாவீரனைக் காணவேண்டும் என்ற ஆசை. அதனால், அவ்வூரின் படைப்பிரிவில் சேர்ந்தான் மித்திர வண்ணன். அவனுடைய ஆவல் அவனை அனைத்தையும் வெகுவிரைவில் கற்க செய்தது. மதுரலிங்கலூர் ஒரு சொர்க்கநகரம் என்பதால் அடிக்கடி போர் நடக்கும். மித்திர வண்ணனும் போரில் கலந்துகொண்டு நம்பிக்கை வீரனாக மாறினான். என்னதான் நடந்தாலும் மித்திர வண்ணனின் ஆசை மட்டும் நிறைவேறவே இல்லை.

மதுரலிங்கலூர் இளவரசி கண்ணுக்கினியாள் மிகவும் அழகாகவும், நீண்ட கருமுடியும் கொண்ட இளவரசி என்பதையும் தாண்டி தேவதைப்போல் இருப்பாள். ஆனால், இதுவரை மித்திர வண்ணன் இளவரசியைக் கண்டதே இல்லை. அன்று ஒருநாள் மித்திரனுக்கு இரவு காவல் பணி வழங்கப்பட்டிருந்தது. சிலர் வந்து அரண்மனை கதவை உடைத்தார்கள். மித்திர வண்ணனோ அவர்களுடன் சண்டையிட்டான். ஆனால், அவனைச் சுற்றி வளைத்து அனைவரும் ஒன்றாக சேர்ந்து தாக்கினார்கள். திடீரென மாவீரன் அங்கு வந்து மித்திர வண்ணனுடன் சேர்ந்து அவர்களை எதிர்த்து சண்டையிட்டான். அவர்களைப் பிடிக்க உதவினான். அவர்கள் பிடிபட்டவுடன் மாவீரன் மறைந்தான் மாயமாக.

மதுரலிங்கலூர் செல்வச்செழிப்பைத் தன்னகதே கொண்ட ஊர். இளவரசியை மணப்பவர் இந்நாட்டவராக இருக்கவேண்டும் என முடிவெடுத்தார் அரசர். இளவரசியின் சுயம்வரம் விழாவில் சாதாரண வீரனில் இருந்து அனைவரும் கலந்து கொள்ளலாம். ஆனால், அவர் மதுரலிங்கலூரைச் சேர்ந்தவராக இருக்க வேண்டும். இவ்வறிவிப்பை வெளியிட்டார் மன்னர். மன்னரின் அறிவிப்பு அண்டை நாடுகளுக்கும் பரவியது. இதை அறிந்த அண்டை நாட்டு அரசர்கள், மதுரலிங்கலூர் மீது போர்தொடுக்க முடிவு செய்தனர். போர் அறிவிப்புகள் வந்து சேர்ந்தன. இதை அறிந்த மித்திர வண்ணன், மாவீரனும் இப்போரில் கலந்து கொள்வானோ? என யோசித்து கொண்டிருந்தான். ஆனால் மாவீரன் கலந்து கொள்ளவில்லை. போரானது பல இழப்புகளையும், சேதங்களையும் தந்தது. மித்திர வண்ணனுக்குப் பெருத்த ஏமாற்றம். மாவீரன் போரில் பங்கேற்கவில்லை. இப்போரில் வெற்றியானது மதுரலிங்கலூரை அடைந்தாலும், மிகப்பெரிய இழப்பையும் சந்தித்தது, இந்த போரில் மதுரலிங்கலூர் தனது மிகச்சிறந்த அரசரான விகடனேசரை இழந்தது, இந்த இழப்பு அனைவரையும் கலங்க செய்தது.

அப்போது நாட்டில் பல அரசியல் குழப்பங்கள் ஏற்பட்டது. சிம்மாசனத்திற்காகப் பல சதிவேலைகள் நடந்தேறிக் கொண்டிருந்தன. இதற்கிடையில் மாவீரன் ஏன் போரில் கலந்து கொள்ளவில்லையென யோசித்து கொண்டிருந்தான் மித்திர வண்ணன். பல குழப்பங்களுக்கு இடையில் இளவரசி கண்ணுக்கினியாள்

மகாராணியாக பட்டம் சூட்டப்பட்டாள். இதுவரை இளவரசியைக் காணாத மித்திரன் அன்று கண்டான் ஏனோ அதிர்ச்சியாக. ஏனெனில், அந்த மாவீரனின் விழிகளும், இளவரசியின் விழிகளும் ஒரேமாதிரியாக இருந்தன. நாட்கள் செல்லச் செல்ல இவனுக்குள் குழப்பம் அதிகரித்து கொண்டே இருந்தது. கண்ணுக்கினியாள் ஆட்சிக்கு வந்த சில மாதங்களிலே நாட்டில் இருந்த குழப்பங்களும், சதி வேலைகளும் மாயமாய் மறைந்து போயின. இருப்பினும், மித்திர வண்ணனின் குழப்பம் மட்டும் மறையாமல் நாளுக்குநாள் வளர்ந்து கொண்டே சென்றது.

ஒருநாள் மகாராணி கண்ணுக்கினியாளைத் தனியாக சந்தித்துப் பேசிவிடவேண்டும் என முடிவெடுத்து, சந்திக்கச் சென்றான் மித்திர வண்ணன். மகாராணியும் சந்திக்க சம்மதித்தார். இருவரும் அரண்மனையின் ஆலோசனை கூடத்தில் சந்தித்தார்கள். மித்திர வண்ணன் நீங்கள் யார்? உங்களுக்கு போர்கலைகள் தெரியுமா எனக் கேள்வி கணைகளைக் கண்ணுக்கினியாள் மீது தொடுத்துக்கொண்டே சென்றான். மகாராணி பேசத் தொடங்கினார். நான் தந்தைக்குக் கட்டுப்பட்டுப் போரில் பங்கேற்கவில்லை. போர் என் தந்தையைக் கட்டுப்படுத்திக் கொண்டு சென்றது என்று கூறிவிட்டுச் சென்றுவிட்டாள்.

மித்திர வண்ணனின் விழிகளில் கண்ணீரும், குழப்பங்களும் மகாராணியின் பதிலால் காற்றில் கரைந்தது. சில காலங்களிலே மதுரலிங்கலூர் மகாராணி கண்ணுக்கினியாளின் ஆட்சியினாலும், படைதளபதி மித்திர வண்ணனின் மேற்பார்வையினாலும் ஒரு தலைசிறந்த நாடாக விளங்கியது. மித்திர வண்ணனின் மனதில் உயர்ந்த இடத்தில் இருந்தாள் அவள்.

பெரும் போரில் சிதைந்த தன் நாட்டைத் தன் வீரத்தாலும், அறிவு ஆற்றலாளும் சிறந்த படைத்தளபதியின் உதவியாளும் நம் மகாராணி மீட்டெடுத்துள்ளார் என்று நாட்டு மக்கள் பேசிக் கொண்டனர். நாட்டை நல்வழிப்படுத்துவது அரசனின் கடமை.

செ. பொற்கொடி (AU180232)
கணிதம் இளங்கலை மூன்றாமாண்டு (பிரிவு-1)