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Pt. MOHAN LAL S.D. COLLEGE FOR WOMEN, GURDASPUR

A MULTI FACULTY POST GRADUATE INSTITUTE

Re - accredited with 'A' grade by NAAC (3rd cycle 2024)

IIC Ranking '3 Star' Rating by Ministry of Education 2025

MANAGED BY: GGDSD COLLEGE SOCIETY, CHANDIGARH

AFFILIATED TO: GURU NANAK DEV UNIVERSITY, AMRITSAR

OUR INSPIRING SPIRIT

PT. MOHAN LAL JI

FORMER EDUCATION, HOME AND FINANCE MINISTER, PUNJAB
FOUNDER PRESIDENT OF GGDSD COLLEGE SEC-32, CHANDIGARH
PT. MOHAN LAL S.D. COLLEGE FOR WOMEN, GURDASPUR
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EX-VICE PRESIDENT, EVEREADY INDUSTRIES INDIA LTD.

E-MAGAZINE

'DARPAN'

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GGDSD Society Chd.

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General Secretary,
GGDSD Society Chd.

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Dr. (Mrs.) Neeru Sharma
Chief Editor : Principal

Er. Surkhab Shelly
Editor

Dr. Khushboo
Editor

Mr. Ashwani
Technical Expert

Dear Sdians...

It gives me immense sense of fulfilment when I look at the monthly edition of college e-Magazine 'DARPAN'. The essential purpose of e-magazine 'DARPAN' is to inform, engage and inspire faculty, students, parents, alumni and our stakeholders. This e-magazine endeavors to reflect the values and the long tradition of excellence of the institution itself. Throughout the year campus buzzes with various activities that makes learning experience at SD Gurdaspur, a unique one. The perpetual efforts of the faculty, students and clubs/societies of the college in keeping the campus alive are commendable. Workshops, conferences, competitions, rallies, sports, guest lectures, FDPs, PDPs and a great variety of activities that corroborate academic learning help our students to grow in the real sense.

I congratulate Er. Surkhab Shelly and Dr. Khushboo (editors) for giving practical shape to my idea of e-magazine and wish all the best for inspired and result oriented session.

Dr. (Mrs.) Neeru Sharma

Principal

SEMINAR ON ARTIFICIAL INTELLIGENCE

The Department of Computer Science organized a seminar on 'Artificial Intelligence' (AI), featuring insightful presentations by distinguished speakers. The seminar commenced with an engaging presentation by Dr. Harjot Kaur on the topic 'OpenAI'. She provided an overview of OpenAI, highlighting its advancements in developing artificial intelligence systems, including language models and their impact on various industries. Following this, Dr. Mohit Angurala delivered a thought-provoking presentation on 'The Future of Intellectual Property Rights (IPR) in the Era of Artificial Intelligence (AI)'. He discussed the challenges and opportunities AI presents in the realm of intellectual property, emphasizing the need for updated regulations and ethical considerations. Mrs. Sandeep Kaur presented her views on 'The Role of AI in Sustainable Development'. She elaborated on how AI technologies are being leveraged to address environmental challenges, optimize resource management, and promote sustainable growth. Lastly, Mrs. Surkhab Shelly delivered an insightful presentation on 'The Role of AI in Research'. She illustrated the transformative impact of AI in enhancing research methodologies, data analysis and innovation across diverse fields. The seminar concluded with address by the college principal, who highlighted both the advantages and challenges of AI, noting its potential to enhance knowledge while also posing concerns about diminishing intellectual and critical thinking.

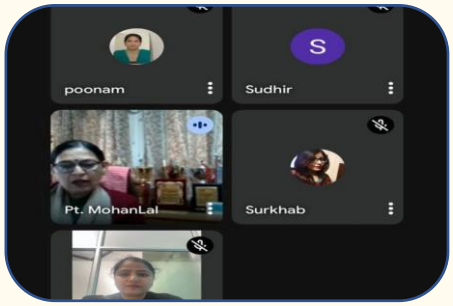
SEMINAR ON 648TH BIRTH ANNIVERSARY OF SHRI GURU RAVIDAS JI

The Punjabi Department organized a seminar dedicated to the 648th birth anniversary of Shri Guru Ravidas Ji. The first speaker Mr. Pawan Kumar, Lecturer English Government Senior Secondary School, Kazi Chak, Gurdaspur threw light on the life struggle of Sri Guru Ravidas ji and the meaning and purpose of his poems in simple and concise language. The second speaker, Mr. Keval Krishna PAS-1 Soil Conservation Officer, Gurdaspur informed the students about Guru Ravidas ji's verses on real education that give the understanding of good and bad. He said that Guru Ravidas ji was a revolutionary person who opposed the practice of sati and raised his voice for women's rights. Apart from this, the third speaker, Dr. Sukhwinder Kaur inspired the students to adopt the principles of Guru ji. At the end of the seminar, the College Principal Dr.(Mrs.) Neeru Sharma ji thanked the key speakers and presented mementos as a token of gratitude to them.

WEBINAR ON NATIONAL SCIENCE DAY

The Science Department and Celebration Cell of IIC organized a webinar to celebrate National Science Day. The keynote speaker, Mr. Harmeek Singh, a field biologist from the Biodiversity Park Programme, CEMDE, Delhi University, delivered an enlightening lecture on 'Understanding Ecosystem for Health and Well-being'. Mr. Singh emphasized the critical role of ecosystems in providing essential services like clean air, water, food, and climate regulation. He highlighted the significance of biodiversity parks in preserving ecological balance, conserving native species, promoting education, research, and eco-tourism. He encouraged students to actively participate in biodiversity conservation and awareness initiatives.

CAREER SESSION ON ROLE OF EXPERIENTIAL LEARNING IN ENHANCING EMPLOYABILITY



A career session on 'Role of Experiential Learning in Enhancing Employability' was organized by the Career Counselling Placement & Guidance Cell in collaboration with the Computer Science Department. In this session, Dr. Himesh Sharma, Director, Skill Lab highlighted the significance of experiential learning in improving employability by integrating theoretical knowledge with hands-on training, internships, and real-world applications. Mr. Sudhir Sharma, Unit Head elaborated on the role of Skill Enhancement Courses, which focus on practical, industry-relevant skills through lab-based projects and internships. Overall, the session provided valuable insights into skill-based learning and its impact on career development.

WORKSHOP ON FINANCIAL EDUCATION FOR YOUNG CITIZENS AND CAREER OPPORTUNITIES IN SEBI

The Commerce Department and Enactus Club in collaboration with the National Institute of Securities Markets (NISM), organized a two-day workshop on 'Financial Education for Young Citizens and Career Opportunities in SEBI' under Kona-Kona Shiksha Programme. The workshop aimed to provide students with essential knowledge of financial markets, regulatory authorities, investment avenues, and potential career opportunities in the Securities and Exchange Board of India (SEBI). The sessions were conducted by Mr. Bhagwant Singh, an authorized member of NISM. The workshop covered 8 sessions focusing on Financial Literacy, Regulatory Authorities in India, Investment Avenues – Equity and Debt Markets, Mutual Funds and Systematic Investment Plans (SIP), Derivatives and Commodity Markets and Careers in SEBI and Financial Markets. College principal Dr. (Mrs.) Neeru Sharma extended her heartfelt appreciation to Mr. Bhagwant Singh for conducting an insightful and enriching workshop. She emphasized the importance of financial education in today's world. She also commended the Commerce Department and Enactus Club for their efforts in organizing the event.

WORKSHOP ON EFFECTIVE SALES AND MARKETING STRATEGIES FOR ENTREPRENEURS/STARTUPS

The PG Department of Commerce in collaboration with the Institution's Innovation Council, organized a workshop on 'Effective Sales and Marketing Strategies for Entrepreneurs/Startups'. The session was conducted by Ms. Megha Sharma, Assistant Professor in Department of Commerce, Guru Nanak Dev University College, Sujanpur. The objective of this workshop was to equip students with the latest marketing strategies essential for business success. Ms. Megha Sharma emphasized the importance of adapting to modern marketing trends in a rapidly evolving business environment. She discussed how traditional marketing methods are being replaced by digital and innovative strategies that allow businesses to reach a wider audience. The speaker highlighted how young entrepreneurs can utilize different marketing techniques to build a strong brand presence and sustain their ventures in competitive markets. The session was particularly beneficial for students interested in entrepreneurship, offering them actionable knowledge on how to develop and implement effective sales strategies.

WORKSHOP ON ART OF FABRIC DYEING

The Fashion Designing Department organised a two- day workshop to provide knowledge about the art of fabric dye using traditional and modern techniques. The students were guided through different methods such as Spiral technique, Bandhani, Knotting, Pleating methods, Dip Dyeing & Ombre effects. By the end of the workshop, students successfully created their own Tie and Dye fabric pieces. The event fostered creativity amongst the students.

COLLEGE PRINCIPAL HONORED FOR HER CONTRIBUTION TO SUSTAINABLE DEVELOPMENT



The State-Level Award Ceremony for the Skill to Entrepreneurship Program for Higher Education Institutes 2024-25 was held at HMV College, Jalandhar. The Chief Guest for the event was Sh. Deepak Bali, Advisor to the Punjab Heritage and Tourism Promotion Board. During this ceremony, College Principal Dr. (Mrs.) Neeru Sharma was awarded the 'Best Achiever-2024' State-Level Award by the National Edutrust of India, in recognition of her remarkable achievements. The CEO Mr. Samarth Sharma in his address congratulated College Principal Dr. (Mrs.) Neeru Sharma, stating that despite the college being located in a border area, she has carried out the work with great dedication and commitment. He appreciated the efforts of the Principal and her team for this prestigious honor out of 500 colleges of Punjab.

WORKSHOPS ON CHEMICAL HAIR TREATMENT & HAIR SHADES


The Cosmetology Department organized a one-day workshop on Chemical Hair Treatment. The session aimed to create awareness about various chemical hair treatments and their techniques. Mr. Arshdeep, an expert from Amritsar, was invited. During the session, students gained practical knowledge of different chemical treatments, including Keratin and Botox treatments. The Cosmetology Department organized another one-day workshop on 'Creative Hair Shades' which aimed at creating awareness about hair coloring techniques. Mr. Abhishek, an expert from Hair Gallery Salon & Academy, Gurdaspur, was invited as the resource person for the session. During the workshop, students gained insights into various creative hair shades and their application techniques, including ombre and balayage. The session provided hands-on experience, enhancing their understanding of modern hair coloring trends.

GUEST LECTURE ON THE IMPORTANCE OF LIBRARY IN HIGHER EDUCATION

The Library Committee hosted a guest lecture on the 'Importance of Library in Higher Education'. The event featured Sh. Jang Bahadur Singh Pannu, Frontline Services Coordinator at Monash University Library, Victoria, Australia, as the resource person. The session covered various aspects of modern libraries including digital resources, study spaces, online booking systems, orientation programs and special provisions for students with disabilities. Sh. Pannu highlighted that Monash University Library provides access to over 4 million electronic and print materials and offers free membership to its students. Students and faculty actively engaged in discussion about digital publishing, open days for students and parents, workshops to enhance learning experiences, library advancements and resource utilization in higher education.

GUEST LECTURE ON THE IMPORTANCE OF MATHEMATICAL LABS

The Mathematics Department organized a guest lecture on the Importance of Mathematical Labs. Dr. Sarbjit Singh, Assistant Professor at GNDU College, Narot Jaimal Singh was invited as the resource person, emphasizing the significance of mathematical calculations in daily life and the role of mathematical labs and software in simplifying complex data analysis. He highlighted their applications in Physics, Botany, Economics, Commerce, Artificial Intelligence and explained key mathematical commands for data analysis.

OUTREACH PROGRAMME

The Rotaract Club celebrated Mahashivratri through an outreach program. A fruit distribution drive was arranged at the historic Kalanaur Shiv temple. It is the only temple in India to have a Shivalinga presented in the horizontal position. The event aimed to foster a sense of devotion, social responsibility, and generosity among students while contributing to the well-being of the community. This visit was a spiritually enriching experience. The college Principal, faculty members (teaching and non-teaching), and students donated generously for this noble cause.

TWO-DAY DEMO DAY ON GRAPHIC DESIGN AND CYBER SECURITY

The Social Media Cell of IIC and the IT Club of the college organized a two-day Demo Day on Graphic Design and Cyber Security. The sessions were conducted by Er. Simran, Chairperson of CBA Infotech, and Mr. Vikas, Technical Expert, under the supervision of Er. Sandeep. On the first day, participants gained hands-on experience with Adobe Illustrator, learning to create vector graphics, logos, and digital illustrations using advanced tools and techniques. The second day covered both Graphic Design and Cyber Security, where students refined their design skills and learned to identify cybersecurity threats, safeguard digital information, and apply preventive measures. The event successfully enhanced students' practical skills, fostering both creativity and cybersecurity awareness.

DRAPING COMPETITION

The Fashion Designing department organised 'Draping competition' to show their creativity, technical skills and innovation in fabric draping. The competition aimed to promote artistic expression and encourage participants to experiment with silhouettes, textures and structures using fabric. Students were given a fixed time to design and drape garments on dummies, following a specific theme. The themes include contemporary fashion, historical influences, sustainable draping and avant-garde concept.

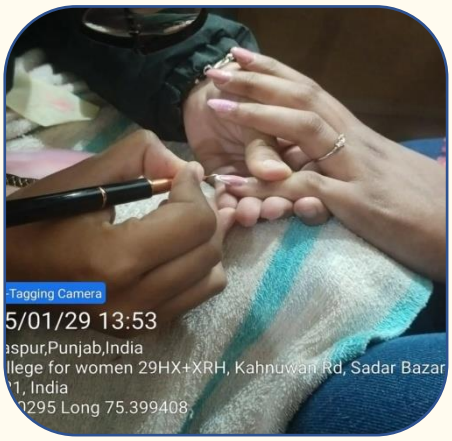
MENTORSHIP SESSION ON ENTREPRENEURSHIP

The Celebration Cell of the IIC and the Economics Department organized a mentorship session on entrepreneurship, led by Mr. Pallav Vikrant, Founder and CEO of Limitless Skills Pvt. Ltd. and Founder President of Samagr Unnayan Foundation. Drawing from his experience as Senior Manager (Training) at Sri Aurobindo Society and School Administrator at Sri Aurobindo School of Integral Education, Chandigarh, Mr. Vikrant explained the difference between an entrepreneur and a businessman using real-life examples. He emphasized that entrepreneurs generate innovative ideas, while businessmen focus on marketing and expanding those ideas. He also discussed various government schemes, grants, and startup opportunities available to young entrepreneurs.

CELEBRATING NATIONAL STARTUP DAY

The Celebration Cell of IIC, Home Science Department, and Eco Club celebrated 'National Startup Day' at the college. The event aimed to provide students with hands-on entrepreneurial experience in line with the National Education Policy (NEP). Vegetables from the college kitchen garden were used for preparing pickle and a stall was arranged in the college campus for selling the pickle.

SKILL DEVELOPMENT COURSE ON NAIL EXTENSION



The Department of Cosmetology organized a skill development course on 'Nail Extension' under the realm of IQAC. The course was supervised by our alumni Ms. Jashanpreet Kaur. The primary objective of this course was to equip students with practical skills and techniques essential for various nail extensions and art forms, including nail application, French art, gel extensions, and acrylic extensions. Students were also guided on nail care after extensions.

VISIT TO BANK OF BARODA

The Department of Commerce, in collaboration with the Enactus Club, visited the Bank of Baroda as part of the Add-On course on Banking and Insurance. The purpose of this visit was to educate the students regarding understanding of banking operations, customer services and the essential role played by financial institutions in the economy. The visit kicked off with an informative orientation led by the branch manager, who shared an overview of the bank's history, mission, and the array of services offered. Key topics discussed included KYC Documentation, Banking Products, Insurance Services and Digital Banking.

VISIT TO MUSHROOM FARM

The Celebration cell of IIC, the Economics Department and the Eco Club of the college organized a visit to mushroom farm in Kullian Aryian village. Mr. Vinod Thapa guided the students about the process of mushroom cultivation. Mr. Thapa explained that mushroom farming involves several key steps such as composting, spawning, casing, pinning, cropping and harvesting. He emphasized the importance of maintaining the right temperature and humidity levels, as mushrooms thrive in specific environmental conditions. Students also asked about marketing strategies for mushrooms.

EDUCATIONAL VISIT TO AUSTRALIAN BAKERY

The Home Science Department organized an educational visit to Australian Bakery, Gurdaspur. The students learnt about flower arrangement sessions, where they learnt about creating beautiful bouquets using various techniques and contrasting colors. At the bakery section, students observed the preparation of assorted baked goods, including patties, buns, and cakes.

EXHIBITION-CUM-SALE

The Fashion Designing Department organized a two-day exhibition-cum-sale providing a platform for the students to showcase their creativity and entrepreneurial skills. The exhibition featured a variety of handcrafted items, including Tie & Dye dupattas, painted bags, bed sheets, kurtas, lehengas, aprons, coasters with napkins, Shagun envelopes, baby frocks, and plazos. The event saw enthusiastic participation from students and faculty.

STUDENTS ACHIEVEMENTS

- **Our two college students, Akshita and Gurpreet Kaur, participated in the National Integration Camp (NIC) organized by NSS at Chandigarh University, Mohali, from February 5 to February 11, 2025. This seven-day camp brought together students from ten states, including Punjab, Maharashtra, Andhra Pradesh, Uttar Pradesh, Uttarakhand, Himachal Pradesh, Rajasthan, Haryana, and Chandigarh (UT). Students were engaged in various activities like Rangoli competition, Expert sessions, Sessions on Climate Change and Sightseeing tour etc.**

- **Our five college students, Shruti Rana, Sunakshi, Akshita, Preety, and Anamika, representing the CA and ECO CLUB, were selected to participate in the IDE Innovation, Design, and Entrepreneurship Bootcamp (Phase 2) – 2025, held from February 17 to 21, 2025, at Patna. The prestigious event was organized by the All-India Council for Technical Education (AICTE) and the Ministry of Education's Innovation Cell (MIC) in collaboration with the Wadhwani Foundation. The students showcased SD Nursery and Vermicomposting; two initiatives focused on sustainable development. Their participation included engagement in various interactive and insightful sessions such as Design Thinking Basics, Customer Discovery Lab, Panel Discussion on the Entrepreneurial Landscape, Mastering Business and Revenue Models, Market Impact and Financial Literacy, and Pitch Presentation Mastery. These sessions provided the students with a comprehensive understanding of entrepreneurship, innovation, and sustainability in business. Among 70 competing teams from across India, our students stood out for their innovative ideas and exemplary performance, earning them the prestigious "Best Performing Team" award, a testament to their commitment and excellence in entrepreneurial learning.**

- **Every year, a paper on moral education is conducted by Guru Gobind Singh Study Circle, Ludhiana. The members of Guru Gobind Singh Study Circle, Ludhiana visited the college. 57 students participated in this exam. 11 students achieved B+ grade and they were honoured with shields and certificates. Additionally, 16 students achieved B grade and were awarded medals.**

STUDENTS' ACHIEVEMENTS CONTD...

- **4 Rotaracters [Nandini (Club president), Anamika (Club Secretary), Deepika (vice president) and Shruti (Media ambassador) attended 'Rotaract District Conference'- Irtiqaa held at S.G Thakur Singh Art gallery Amritsar. During the conference several outstanding projects were showcased, demonstrating the positive influence of Rotaract initiatives. Our 2 college students bagged titles of 'Youth Empowerment Trailblazer and Serene Celebrant' during this Rotaract conference.**

- **Golden Institute of Management and Technology, Gurdaspur organized an inter-college event Utsav- 2025. The different competitions were organised like Fashion Show, Mehndi, Nail art, Extempore, Debate, Collage making, Poster Making, Drum charades, Business Idea, Programming skills, Selfie challenge, Solo Dance, Solo Song, Group Dance, Face Painting and Rangoli. Out of 500 participants in this inter college event, our college students Ms. Deepika MSc FD 2nd Sem got first prize in Rangoli, Ms. Manjot MSc FD 2nd Sem got 2nd prize in face painting, Anakh BSc FD 2nd Sem got 2nd prize in Mehndi, Ms. Gursimran Diploma cosmetology got 2nd prize in Nail Art, Ms.Iram BCA 6th sem and Ms. Vanshika BA 6th Sem got 2nd prize in Collage Making, Ms.Kajal BA6th sem got 2nd prize in poster making, Ms. Lavanya, Ms.Harnoor, Ms.Astha, Ms. Radhika and Ms. Pavitika from BA 4th Sem, BA 6th or BA 2nd sem got 2nd prize in Group Dance, Ms. Shruti and Ms. Sonakshi from BCA 6th sem got 2nd prize in Business ideas. Our College Fashion Show got 2nd Prize. All participants were awarded with mementos and medals. The college Principal Dr.(Mrs.) Neeru Sharma Congratulated and appreciated all the participants, Dean ECAs and members of Youth Club for their untiring efforts.**

CONTINUE.....

- On 10th and 11th February 2025, Samagr Unnayan Foundation organized a two-Day Nature Camp in Keshopur-Miani, Gurdaspur. Five volunteers Ms. Avneet, Ms. Pinki, Ms. Shruti, Ms. Sonakshi and Ms. Muskandeep from Pt. Mohan Lal S.D College for Women, Gurdaspur participated in this Nature camp. All volunteers provided valuable support throughout the event. The event aimed at fostering environmental awareness among students from Government Senior Secondary Schools of Manwal and Gho.
- Lok Sabhyacharak Pir (Regd.), Gurdaspur, organized the 'Sunakhi Punjabi Mutiyar' competition. Eight students from our college participated, with Sharanjeet Kaur securing third place and receiving a tikka, trophy, certificate, and cash prize as an honor. Additionally, Jasmine Dhillon was awarded the title of 'Queen of Laughter', while Jasmine Randhawa received the title of 'Malookhdi Mutiyar'.

- Baba Shri Chand Sports Club, Village Maseeta, Gurdaspur, organized its First Volleyball Tournament. The college volleyball team delivered an outstanding performance, securing the First Position in the tournament. The team was awarded a cash prize of ₹5100 by Mr. Raman Behal, Chairman, Health System Corporation, Punjab. Shivani Sharma was honored as the Best Player of the Tournament, receiving a trophy and a cash prize of ₹500 from the Sarpanch of Village Maseeta.

- On 8th February 2025 Wushu Intercollege Championship was held at GNDU Amritsar in which our student Manjit Kaur got Bronze medal.

- On February 13, 2025, District Athletic Meet was organized by Nehru Yuva Kendra, Gurdaspur in which our college team excelled. The junior team secured first and the senior team second in Tug of War. In Volleyball, the professional team secured first and the junior team second. In the 400-meter race, Arshdeep Kaur secured first, Manjit Kaur second, and Bavleen Kaur joint third.

ਐੱਨ ਐੱਸ ਐੱਸ ਪ੍ਰੋਗਰਾਮ ਵਿਦਿਆਰਥੀਆਂ ਲਈ ਕਿੰਨਾ ਫ਼ਾਇਦੇਮੰਦ

ਰਾਸ਼ਟਰੀ ਸੇਵਾ ਯੋਜਨਾ 1969 ਵਿਚ ਸਭਿਆਚਾਰਿਕ ਸੇਵਾਵਾਂ ਰਾਹੀਂ ਨੌਜਵਾਨਾਂ ਦੀ ਸ਼ਖਸ਼ੀਅਤ ਅਤੇ ਚਰਿੱਤਰ ਨੂੰ ਵਿਕਸਿਤ ਕਰਨ ਦੇ ਮੁੱਖ ਉਦੇਸ਼ ਨਾਲ ਸ਼ੁਰੂ ਕੀਤੀ ਗਈ। ਕਾਲਜ ਦੇ ਵਿਦਿਆਰਥੀਆਂ ਦੁਆਰਾ ਪ੍ਰਾਪਤ ਗਿਆਨ ਦੇ ਨਾਲ ਨਾਲ ਕਿਰਤ,ਸੇਵਾ, ਚਰਿੱਤਰ ਅਤੇ ਤਿਆਗ ਰਾਹੀਂ ਆਪਣੀ ਸ਼ਖਸ਼ੀਅਤ ਦਾ ਵਿਕਾਸ ਕਰਨ ਅਤੇ ਉਹਨਾਂ ਵਿੱਚ ਵਿਹਾਰਿਕ ਜੀਵਨ ਦਾ ਤਜ਼ਰਬਾ ਪੈਦਾ ਕਰਨਾ ਵੀ ਇੱਕ ਉਦੇਸ਼ ਸੀ। ਅਸਲੀਅਤ ਵਿੱਚ ਮੇਰਾ ਗਿਆਨ, ਮੇਰੀ ਕਿਸਮਤ, ਮੇਰੀ ਊਰਜਾ ਮੇਰੇ ਲਈ ਨਹੀਂ ਹੈ ਸਗੋਂ' ਆਪ' ਦਾ ਵਿਕਾਸ ਹੁੰਦਾ ਹੈ ਅਤੇ ਨੌਜਵਾਨ ਪੀੜ੍ਹੀ ਨੂੰ ਪੈਸੇ , ਸ਼ਕਤੀ ਅਤੇ ਸੁਆਰਥੀ ਮਨੋਰਥਾਂ ਦੀ ਬਜਾਏ ਤਿਆਗ ਅਤੇ ਸੇਵਾ ਦਾ ਪਾਠ ਪੜ੍ਹਾਇਆ ਜਾਂਦਾ ਹੈ।ਐਨਐਸਐਸ ਸਮਾਜ ਦੇ ਸਾਰੇ ਵਰਗਾਂ ਭਾਵ ਕਿ ਇਨਸਾਨੀਅਤ ਦੀ ਸੇਵਾ ਨੂੰ ਆਪਣੇ ਮੋਟਿਫ਼ ਵਿੱਚ ਸਮੇਟਦਾ ਹੈ । ਇਸ ਦੇ ਤਕਰੀਬਨ ਸਾਰੇ ਦੇ ਸਾਰੇ ਪ੍ਰੋਗਰਾਮ ਵਿਦਿਆਰਥੀਆਂ ਵਿੱਚ ਸਮਾਜ ਦੇ ਫਰਜ਼ਾਂ ਪ੍ਰਤੀ ਜਾਗਰੂਕਤਾ ਪੈਦਾ ਕਰਦਾ ਹੈ ਅਤੇ ਇਸ ਤੋਂ ਇਲਾਵਾ ਉਹਨਾਂ ਨੂੰ ਵਧੇਰੇ ਸੰਜੀਦਾ, ਰਚਨਾਤਮਕ, ਭਾਵਨਾਤਮਕ ਦੀ ਸੋਝੀ ਅਤੇ ਨਿਰਵਿਘਨ ਕਿਰਿਆਸ਼ੀਲ ਦੀ ਆਦਤ ਨੂੰ ਪੱਕਿਆਂ ਦਾ ਕਰਦਾ ਹੈ। ਸੋ ਅਸੀਂ ਦੂਸਰੇ ਸ਼ਬਦਾਂ ਵਿੱਚ ਕਹਿ ਸਕਦੇ ਹਾਂ ਕਿ ਐਨ ਐਸ ਐਸ ਸਹੀ ਅਰਥਾਂ ਵਿੱਚ ਪਾਠਕ੍ਰਮ ਤੋਂ ਬਾਹਰਲੀ ਗਤੀਵਿਧੀ ਨਹੀਂ ਹੈ। ਇਹ ਸਰਗਰਮ ਭਾਗੀਦਾਰੀ ਦੁਆਰਾ ਲੋਕਾਂ ਦੇ ਜੀਵਨ ਦਾ ਅਧਿਐਨ ਕਰਨ ਦੀ ਇੱਕ ਗਤੀਵਿਧੀ ਹੈ। ਇਹਨਾਂ ਗਤੀਵਿਧੀਆਂ ਦੁਆਰਾ ਵਿਦਿਆਰਥੀ ਆਪਣੇ ਦੇਸ਼ ਦੀ ਸਮਾਜਿਕ ਸਥਿਤੀ ਤੋਂ ਭਲੀਭਾਂਤ ਜਾਣੂ ਹੁੰਦਾ ਹੈ। ਇਹ ਨੌਜਵਾਨਾਂ ਦੇ ਚਰਿੱਤਰ ਨੂੰ ਅਲੱਗ ਰੂਪ ਵਿੱਚ ਢਾਲਣ ਅਤੇ ਉਹਨਾਂ ਵਿੱਚ ਪਿਆਰ, ਦਇਆ, ਦੂਜਿਆਂ ਦੇ ਦੁੱਖਾਂ ਨੂੰ ਸਮਝਣ ਦੀ ਸਮਰੱਥਾ ਅਤੇ ਹਿੰਮਤ ਵਰਗੀਆਂ ਕਦਰਾਂ- ਕੀਮਤਾਂ ਨੂੰ ਪ੍ਰਫੁੱਲਿਤ ਕਰਦਾ ਹੈ। ਭਾਰਤ ਵਿੱਚ ਵਿਦਿਆਰਥੀਆਂ ਨੂੰ ਰਾਸ਼ਟਰੀ ਸੇਵਾ ਦੇ ਕੰਮ ਵਿੱਚ ਸ਼ਾਮਿਲ ਕਰਨ ਦਾ ਵਿਚਾਰ ਰਾਸ਼ਟਰਪਤੀ ਮਹਾਤਮਾ ਗਾਂਧੀ ਦੇ ਸਮੇਂ ਤੋਂ ਹੀ ਸੀ। ਕੇਂਦਰੀ ਵਿਸ਼ਾ ਜੋ ਉਹਨਾਂ ਨੇ ਆਪਣੇ ਵਿਦਿਆਰਥੀਆਂ ਨੂੰ ਵਾਰ-ਵਾਰ ਪ੍ਰਭਾਵਿਤ

ਕਰਨ ਦੀ ਕੋਸ਼ਿਸ਼ ਕੀਤੀ, ਉਹ ਸੀ ਸਮਾਜਿਕ ਜਿੰਮੇਵਾਰੀ। ਉਹਨਾਂ ਨੇ ਕਿਹਾ ਕਿ ਪੜ੍ਹਾਈ ਦੇ ਨਾਲ ਨਾਲ ਵਿਦਿਆਰਥੀਆਂ ਵਿੱਚ ਸਮਾਜ ਪ੍ਰਤੀ ਖਾਸ ਤੌਰ ਤੇ ਦੂਰ ਦੁਰਾਡੇ ਪਿੰਡਾਂ ਦੇ ਲੋਕਾਂ ਦੀ ਸੇਵਾ ਕਰਨਾ ਹੈ ਤਾਂ ਕਿ ਉਹਨਾਂ ਵਿੱਚ ਜਾਗਰੂਕਤਾ ਪੈਦਾ ਕੀਤੀ ਜਾ ਸਕੇ ।ਵਿਦਿਆਰਥੀਆਂ ਨੂੰ ਆਰਥਿਕ ਅਤੇ ਸਮਾਜਿਕ ਸਥਿਤੀ ਦਾ ਕਿਤਾਬੀ ਗਿਆਨ ਜਾਂ ਖੋਜ ਕਰਨ ਦੀ ਬਜਾਏ ਪਿੰਡਾਂ ਦੇ ਲੋਕਾਂ ਨਾਲ ਸਿੱਧਾ ਸਬੰਧ ਸਥਾਪਿਤ ਕਰਕੇ ਵਿਹਾਰਿਕ ਪੱਧਰ ਤੇ ਖੋਜ ਕਰਨ ਦਾ ਉਪਰਾਲਾ ਕੀਤਾ ਜਾਵੇ। ਆਜ਼ਾਦੀ ਤੋਂ ਬਾਅਦ ਡਾ. ਰਾਧਾ ਕ੍ਰਿਸ਼ਨ ਜੀ ਨੇ ਇੱਕ ਪਾਸੇ ਵਿਦਿਆਰਥੀਆਂ ਅਤੇ ਅਧਿਆਪਕਾਂ ਵਿਚਕਾਰ ਵਧੀਆ ਸਬੰਧ ਵਿਕਸਿਤ ਕਰਨ ਅਤੇ ਦੂਸਰੇ ਪਾਸੇ ਕਾਲਜਾਂ ਯੂਨੀਵਰਸਿਟੀਆਂ ਅਤੇ ਭਾਈਚਾਰੇ ਵਿਚਕਾਰ ਉਸਾਰੂ ਸਬੰਧ ਸਥਾਪਿਤ ਕਰਨ ਦੇ ਉਦੇਸ਼ ਨਾਲ ਕਾਲਜਾਂ ਅਤੇ ਯੂਨੀਵਰਸਿਟੀਆਂ ਵਿੱਚ ਆਪਣੀ ਮਰਜ਼ੀ ਅਨੁਸਾਰ ਐਨ ਐਸ ਐਸ ਯੂਨਿਟ ਸ਼ੁਰੂ ਕਰਨ ਦੀ ਸਿਫਾਰਿਸ਼ ਕੀਤੀ। ਉਸ ਤੋਂ ਬਾਅਦ ਸੈਂਟਰਲ ਐਡਵਾਈਜਰੀ ਬੋਰਡ ਆਫ ਐਜੂਕੇਸ਼ਨ ਦੁਆਰਾ 1950 ਵਿੱਚ ਦੁਬਾਰਾ ਵਿਚਾਰਿਆ ਗਿਆ ਅਤੇ ਦੂਸਰੇ ਦੇਸ਼ ਦੇ ਤਜਰਬਿਆਂ ਨੂੰ ਦੇਖ ਦੇਖਦਿਆਂ ਬੋਰਡ ਨੇ ਸਿਫਾਰਿਸ਼ ਕੀਤੀ ਕਿ ਵਿਦਿਆਰਥੀਆਂ ਨੂੰ ਸਵੈ- ਇੱਛਾ ਦੀ ਤੌਰ ਤੇ ਹੱਥੀ ਕੰਮ ਕਰਨ ਲਈ ਕੁਝ ਸਮਾਂ ਦੇਣਾ ਚਾਹੀਦਾ ਹੈ ਅਤੇ ਅਧਿਆਪਕਾਂ ਨੂੰ ਵਿਦਿਆਰਥੀਆਂ ਨਾਲ ਜੁੜਨਾ ਚਾਹੀਦਾ ਹੈ। ਭਾਰਤ ਸਰਕਾਰ ਦੁਆਰਾ 1952 ਵਿੱਚ ਪਹਿਲੀ ਪੰਜ ਸਾਲਾਂ ਯੋਜਨਾ ਦੇ ਖਰੜੇ ਵਿੱਚ ਵਿਦਿਆਰਥੀਆਂ ਲਈ ਇੱਕ ਸਾਲ ਲਈ ਸਮਾਜਿਕ ਅਤੇ ਕਿਰਤ ਸੇਵਾ ਦੀ ਲੋੜ ਉੱਤੇ ਜ਼ੋਰ ਦਿੱਤਾ । ਅੰਤ ਵਿੱਚ 24 ਸਤੰਬਰ 1969 ਦੇ ਤਤਕਾਲੀ ਕੇਂਦਰੀ ਸਿੱਖਿਆ ਮੰਤਰੀ ਡਾ. ਡੀ.ਵੀ. ਕੇ. ਆਰ.ਵੀ.ਰਾਓ ਨੇ ਸਾਰੇ ਰਾਜਾਂ ਨੂੰ ਕਵਰ ਕਰਨ ਵਾਲੀਆਂ 37 ਯੂਨੀਵਰਸਿਟੀਆਂ ਵਿੱਚ ਐਨਐਸਐਸ ਪ੍ਰੋਗਰਾਮ ਦੀ ਸ਼ੁਰੂਆਤ ਕੀਤੀ ਅਤੇ ਨਾਲ ਹੀ ਰਾਜਾਂ ਦੇ ਮੁੱਖ ਮੰਤਰੀਆਂ ਨੂੰ ਉਹਨਾਂ ਦੇ ਸਹਿਯੋਗ ਅਤੇ ਮਦਦ ਲਈ ਬੇਨਤੀ ਕੀਤੀ। ਇਸ ਪ੍ਰੋਗਰਾਮ ਵਿੱਚ ਵਲੰਟੀਅਰਾਂ ਆਮ ਲੋਕਾਂ ਵਿੱਚ ਵਿਭਿੰਨ ਤਰ੍ਹਾਂ ਦੇ ਵਿਸ਼ਿਆਂ ਤੇ ਜਾਗਰੂਕ ਤੇ ਮੁਹਿੰਮਾਂ ਚਲਾਉਂਦਾ ਰਹੇਗਾ

ਯੂਨਿਟ ਵੱਲੋਂ ਕੀਤੀਆਂ ਜਾਣ ਵਾਲੀਆਂ ਗਤੀਵਿਧੀਆਂ ਸਮੇਂ ਦੇ ਅਨੁਸਾਰ ਬਦਲਦੀਆਂ ਰਹਿਣਗੀਆਂ ਜਿਆਦਾ ਤੋਂ ਜਿਆਦਾ ਗਤੀਵਿਧੀਆਂ ਸਮਾਜਿਕ ਬੁਰਾਈਆਂ ਦੇ ਖ਼ਾਤਮੇ ਲਈ, ਸਰਕਾਰਾਂ ਵੱਲੋਂ ਨਵੀਆਂ ਲਾਂਚ ਕੀਤੀਆਂ ਪੋਲਿਸੀਆਂ, ਜੋ ਆਮ ਜਨਤਾ ਦੇ ਹਿੱਤਾਂ ਨਾਲ ਸੰਬੰਧਿਤ ਹਨ, ਉਹਨਾਂ ਨਾਲ ਸੰਬੰਧਿਤ ਪ੍ਰੋਗਰਾਮ ਉਲੀਕੇ ਜਾਣ* ਐਨ ਐਸ ਐਸ ਦਾ

ਉਦੇਸ਼ ਵਿਦਿਆਰਥੀਆਂ ਨੂੰ ਸਿੱਖਿਆ ਲੈਂਦੇ ਸਮੇਂ ਉਹਨਾਂ ਨੂੰ ਸਮਾਜ ਸੇਵਾ ਲਈ ਪ੍ਰੇਰਿਤ ਕਰਨਾ। ਵਿਦਿਆਰਥੀ ਦੇਸ਼ ਦਾ ਭਵਿੱਖ ਹਨ,ਉਹਨਾਂ ਨੂੰ ਆਮ ਲੋਕਾਂ ਦੀਆਂ ਸਮੱਸਿਆਵਾਂ ਤੋਂ ਜਾਣੂ ਕਰਵਾਉਣਾ ਤਾਂ ਕਿ ਭਵਿੱਖ ਵਿੱਚ ਪ੍ਰਸ਼ਾਸਨਿਕ ਵਾਂਗ ਡੋਰ ਸੰਭਾਲਣ ਸਮੇਂ, ਇਹਨਾਂ ਲੋਕਾਂ ਦੀਆਂ ਸਮੱਸਿਆਵਾਂ ਨੂੰ ਸੁਲਝਾਉਣ। ਉਹਨਾਂ ਵਿੱਚ ਆਪਸੀ ਭਾਈਚਾਰੇ ਵਿੱਚ ਸਮਾਜਿਕ ਅਤੇ ਨਾਗਰਿਕ ਜਿੰਮੇਵਾਰੀ ਦੀ ਭਾਵਨਾ ਪੈਦਾ ਹੋਵੇ। ਕਿਤਾਬੀ ਪੜ੍ਹਾਈ ਤੋਂ ਬਾਹਰੀ ਪ੍ਰੈਕਟੀਕਲੀ ਲੋਕਾਂ ਦੀਆਂ ਸਮੱਸਿਆਵਾਂ ਤੋਂ ਜਾਣੂ ਕਰਵਾਉਣਾ। ਵਿਦਿਆਰਥੀਆਂ ਵਿੱਚ ਸਾਂਝੀਵਾਲਤਾ ਦਾ ਪਾਠ ਅਤੇ ਲੀਡਰਸ਼ਿਪ ਦੇ ਗੁਣ ਪੈਦਾ ਕਰਨਾ ਹੈ। ਰਾਸ਼ਟਰੀ ਸੇਵਾ ਯੋਜਨਾ ਦਾ ਮਨੋਰਥ NOT ME BUT YOU,'ਮੈਂ ਨਹੀਂ ਪਹਿਲੇ ਆਪ', 'ਸਵੈ ਸੇ ਪਹਿਲੇ ਆਪ ' ' ਮੈਂ ਨਹੀਂ ਪਹਿਲਾਂ ਤੁਸੀਂ' ਬਿਨਾਂ ਭੇਦ - ਭਾਵ ਇਨਸਾਨੀਅਤ ਦੀ ਸੇਵਾ ਕਰਨਾ ਹੈ,ਵਲੰਟੀਅਰਾਂ ਵਿੱਚ ਇਨਸਾਨੀਅਤ ਦੀ ਭਾਵਨਾ ਨੂੰ ਵਿਕਸਿਤ ਕਰਨਾ, ਸਕਰਾਤਮਕ ਸੋਚ ਨੂੰ ਪ੍ਰਫੁਲਿਤ ਕਰਨਾ ਆਦਿ।

ਐਨ ਐਸ ਐਸ ਦਾ ਪ੍ਰਤੀਕ ਉੜੀਸਾ ਵਿੱਚ ਸਥਿਤ ਕੋਨਾਰਕ ਸੂਰਜ ਮੰਦਰ ਦੇ 'ਰੱਥ' ਚੱਕਰ ਤੇ ਅਧਾਰਿਤ ਹੈ। ਸੂਰਜ ਮੰਦਿਰ ਦੇ ਇਸ ਵਿਸ਼ਾਲ ਪਹੀਏ ਦੀ ਸਿਰਜਣਾ ਸੁਰਖਿਅਤ ਰੱਖਣਾ ਅਤੇ ਸਮੇਂ ਅਤੇ ਸਪੇਸ ਵਿੱਚ ਜੀਵਨ ਦੀ ਗਤੀ ਨੂੰ ਦਰਸਾਉਂਦੇ ਹਨ। ਇਹ ਨਿਰੰਤਰਤਾ ਦੇ ਨਾਲ ਨਾਲ ਤਬਦੀਲੀ ਲਈ ਖੜ੍ਹਾ ਹੈ ਅਤੇ ਸਮਾਜਿਕ ਪਰਿਵਰਤਨ ਤੇ ਉੱਨਤੀ ਲਈ ਐਨ ਐਸ ਐਸ ਦੀ ਨਿਰੰਤਰਤਾ ਨੂੰ ਦਰਸਾਉਂਦਾ ਹੈ।

ਐਨਐਸਐਸ ਦਾ ਸਾਈਨ ਐਸਐਸਐਸ ਦੇ ਬੈਜ ਤੇ ਉਭਰਿਆ ਹੋਇਆ ਹੈ। ਐਨਐਸਐਸ ਵਲੰਟੀਅਰ ਕਮਿਊਨਿਟੀ ਦੀ ਸੇਵਾ ਦੇ ਕਿਸੇ ਵੀ ਪ੍ਰੋਗਰਾਮ ਨੂੰ ਸ਼ੁਰੂ ਕਰਨ ਸਮੇਂ ਪਹਿਨਦੇ ਹਨ। ਸਾਈਨ ਦੇ ਕੋਨਾਰਕ ਚੱਕਰ ਵਿੱਚ ਅੱਠ ਦਰਵਾਜੇ ਹਨ, ਜੋ ਦਿਨ ਦੇ 24 ਘੰਟਿਆਂ ਨੂੰ ਦਰਸਾਉਂਦੇ ਹਨ। ਬੈਜ ਪਹਿਨਣ ਵਾਲਾ ਦੇਸ਼ ਸੇਵਾ ਲਈ 24 ਘੰਟੇ ਤਿਆਰ ਰਹਿਣ ਦਾ ਸੰਦੇਸ਼ ਦਿੰਦਾ।

ਐਨਐਸਐਸ ਰਸਮੀ ਤੌਰ ਤੇ 24 ਸਤੰਬਰ 1969 ਨੂੰ ਰਾਸ਼ਟਰ ਪਿਤਾ ਦੀ ਜਨਮ ਸ਼ਤਾਬਦੀ ਦੇ ਸਾਲ ਤੇ ਸ਼ੁਰੂ ਕੀਤਾ ਗਿਆ ਸੀ। ਇਸ ਲਈ ਹਰ ਸਾਲ 24 ਸਤੰਬਰ ਨੂੰ 'ਐਨਐਸਐਸ ਡੇਅ' ਮਨਾਇਆ ਜਾਂਦਾ ਹੈ।

*Advantage of Joining it in college *

ਕਾਲਜ ਵਿੱਚ ਅਲੱਗ ਅਲੱਗ ਵਿਸ਼ਿਆਂ ਨੂੰ ਸਿਖਾਇਆ ਅਤੇ ਪੜ੍ਹਾਇਆ ਜਾਂਦਾ ਹੈ। ਐਨਐਸਐਸ ਦੀ ਪ੍ਰਕਿਰਿਆ ਰਾਹੀਂ ਅਨੁਸ਼ਾਸਿਤ ਅਤੇ ਕਰਤੱਵਪੂਰਨ ਵਿਦਿਆਰਥੀਆਂ ਨੂੰ ਢਾਲਣ ਦਾ ਮਹੱਤਵਪੂਰਨ ਉਦੇਸ਼ ਪ੍ਰਾਪਤ ਕਰਨਾ ਹੈ। ਇਸ ਦੇ ਨਾਲ ਠੀਕ ਉਹਨਾਂ ਕੋਲੋਂ ਸਮਾਜਿਕ ਜੀਵਨ ਵਿੱਚ ਵਾਪਰ ਰਹੀਆਂ ਵੱਖ ਵੱਖ ਘਟਨਾਵਾਂ ਬਾਰੇ ਜਾਣੂ ਹੋਣ ਦੀ ਉਮੀਦ ਕੀਤੀ ਜਾਂਦੀ ਹੈ। ਇਸ ਮਕਸਦ ਦੀ ਪ੍ਰਾਪਤੀ ਲਈ ਵੱਖ-ਵੱਖ ਵਿਦਿਅਕ ਗਤੀਵਿਧੀਆਂ ਦੇ ਨਾਲ ਨਾਲ ਹੋਰ ਪ੍ਰੋਗਰਾਮ ਵੀ ਅਯੋਜਿਤ ਕੀਤੇ ਜਾਂਦੇ ਹਨ। ਐਨਐਸਐਸ ਵਲੰਟੀਅਰ ਵਿੱਚ ਸਰਬਪੱਖੀ ਚੇਤਨਾ ਪੈਦਾ ਹੁੰਦੀ ਹੈ ਅਤੇ ਉਹ ਸਮਾਜ ਦੀ ਮੌਜੂਦਾ ਸਥਿਤੀ ਤੋਂ ਸੁਚੇਤ ਹੁੰਦਾ ਹੈ। ਜਿਸ ਨਾਲ ਵਲੰਟੀਅਰ ਵਿੱਚ ਸਸ਼ਕਤੀਕਰਨ ਲਈ ਅਸਲ ਵਿੱਚ ਲਾਭਦਾਇਕ ਹੋਵੇਗਾ। ਮੌਜੂਦਾ ਵਿੱਦਿਅਕ ਪ੍ਰਣਾਲੀ ਤੋਂ ਵਿਦਿਆਰਥੀਆਂ ਦੇ ਚਿੰਤਨ, ਮਾਨਸਿਕ ਅਤੇ ਬੌਧਿਕ ਵਿਕਾਸ ਦੀ ਉਮੀਦ ਕੀਤੀ ਜਾਂਦੀ ਹੈ। ਉਸ ਕੋਲ ਕਾਫ਼ੀ ਵਿਹਾਰਕ ਤਜ਼ਰਬਾ ਵੀ ਹੈ।ਜਿਸ ਨੂੰ ਕਾਲਜ ਛੱਡਣ ਤੇ ਕੋਈ ਸਮੱਸਿਆਂ ਅਤੇ ਮੁਸ਼ਕਿਲਾਂ ਦਾ ਸਾਹਮਣਾ ਕਰਨਾ ਪੈ ਸਕਦਾ ਹੈ। ਉਸ ਨੂੰ ਪਹਿਲਾਂ ਹੀ ਮੁਸ਼ਕਿਲ ਦਾ ਸਾਹਮਣਾ ਕਰਨ ਦਾ ਤਜ਼ਰਬਾ ਹੋਵੇਗਾ ਤਾਂ ਉਹ ਆਪਣੀ ਜ਼ਿੰਦਗੀ ਵਿੱਚ ਮੁਸ਼ਕਿਲਾਂ ਦਾ ਸਾਹਸ ਨਾਲ ਸਾਹਮਣਾ ਕਰ ਸਕਦਾ ਹੈ ।ਜੇਕਰ ਉਸ ਨੇ ਸਮਾਜ ਦੀਆਂ ਸਮੱਸਿਆਵਾਂ ਦੁੱਖਾਂ ਤੇ ਮੁਸ਼ਕਲਾਂ ਨੂੰ ਸਮਝ ਲਿਆ ਹੈ ਤਾਂ ਉਸਨੇ ਜ਼ਿੰਦਗੀ ਦੇ ਅਰਥਾਂ ਨੂੰ ਸੱਚਮੁੱਚ ਹੀ ਸਮਝ ਲਿਆ ਹੈ। ਸੋ ਐਨਐਸਐਸ ਵਿਦਿਆਰਥੀ ਦੇ ਚਰਿੱਤਰ ਵਿੱਚ ਅਹਿਮ ਭੂਮਿਕਾ ਨਿਭਾਉਂਦਾ ਹੈ। ਇਸ ਤੋਂ ਇਲਾਵਾ ਵਿਦਿਆਰਥੀਆਂ ਨੂੰ ਵਿਅਕਤੀਗਤ ਤੌਰ ਤੇ ਇੱਕ ਗਰੁੱਪ ਰੂਪ ਵਿੱਚ ਕੰਮ ਕਰਨ ਦਾ ਮੌਕਾ ਮਿਲਦਾ ਹੈ। ਵਿਦਿਆਰਥੀਆਂ ਵਿੱਚ ਆਤਮ -ਵਿਸ਼ਵਾਸ ,ਲੀਡਰਸ਼ਿਪ, ਹੁਨਰ ਵਿਕਸਿਤ ਕਰਨਾ ਅਤੇ ਜੀਵਨ ਦੇ ਵੱਖ -ਵੱਖ ਖੇਤਰਾਂ ਵਿੱਚ ਵੱਖ-ਵੱਖ ਲੋਕਾਂ ਬਾਰੇ ਸਿੱਖਣ ਦੀ ਪ੍ਰਕਿਰਿਆ ਦਾ ਵਿਕਾਸ ਹੁੰਦਾ ਹੈ। ਵਿਦਿਆਰਥੀਆਂ ਵਿੱਚ ਨਿਪੁੰਨ ਸਮਾਜਿਕ ਨੇਤਾਵਾਂ ਅਤੇ ਕੁਸ਼ਲ ਪ੍ਰਸ਼ਾਸਕ ਦਾ ਅਨੁਭਵ ਹੁੰਦਾ ਹੈ। +1,+2 ਦੇ ਵਿਦਿਆਰਥੀ ਜੇਕਰ ਐਨ ਐਸ ਐਸ ਜੋਆਇੰਨ ਕਰਦੇ ਹਨ ਤਾਂ ਹਾਇਰ ਸਟੱਡੀ ਲਈ ਉਨਾਂ ਲਈ ਕਾਫ਼ੀ ਲਾਭਦਾਇਕ ਰਹੇਗਾ ਕਿਉਂਕਿ ਐਨ ਐਸ ਐਸ ਦੇ ਸਰਟੀਫ਼ਿਕੇਟ ਦੇ ਪੰਜ ਅੰਕ ਮਿਲਦੇ ਹਨ। ਜਿਸ ਕਾਰਨ ਵਿਦਿਆਰਥੀ ਟੈਪ ਕਾਲਜ ਵਿੱਚ ਦਾਖ਼ਲਾ ਲੈ ਸਕਦਾ ਹੈ। ਇਥੋਂ ਤੱਕ ਕਿ ਵਿਦੇਸ਼ਾਂ ਵਿੱਚ ਵੀ ਐਨਐਸਐਸ ਦੇ ਸਰਟੀਫ਼ਿਕੇਟ ਦੀ ਅਹਿਮੀਅਤ ਹੈ। ਜੇਕਰ ਹਾਇਰ ਸਟੱਡੀ ਲਈ ਵਿਦੇਸ਼ ਜਾਣਾ

ਚਾਹੁੰਦੇ ਹੋ। ਭਾਰਤ ਵਿੱਚ ਸਰਕਾਰੀ ਨੌਕਰੀਆਂ ਲਈ ਐਨਐਸਐਸ ਦਾ ਸਰਟੀਫਿਕੇਟ ਤੁਹਾਡੇ ਕੁਲ ਰੈਂਕ ਨੂੰ ਉੱਪਰ ਉਠਾਉਣ ਵਿੱਚ ਮਦਦ ਕਰਦਾ ਹੈ। ਜੇਕਰ ਹੇਠ ਲਿਖੇ ਖੇਤਰਾਂ ਵਿੱਚ ਜਾਣਾ ਚਾਹੁੰਦੇ ਹੋ:-

* UPSC

* Police department

* Education department

* Defence service

* ਪਬਲਿਕ service

ਇਸ ਤੋਂ ਇਲਾਵਾ ਵਿਭਿੰਨ ਤਰ੍ਹਾਂ ਦੇ ਕੈਂਪਾਂ ਵਿੱਚ ਕਾਲਜ ਵੱਲੋਂ ਭੇਜਿਆਂ ਜਾਂ ਸਕਦਾ ਹੈ ਜਿਵੇਂ -:ਰਾਸ਼ਟਰੀ ਏਕਤਾ ਕੈਂਪ, ਸਾਹਸੀ ਪ੍ਰੋਗਰਾਮ, ਰਾਜ ਪੱਧਰ ਦੇ ਨਾਲ-ਨਾਲ ਰਾਸ਼ਟਰੀ ਪੱਧਰ ਦਾ ਪ੍ਰੋਗਰਾਮ, ਪ੍ਰੇਰਕ ਲੈਂਪ, ਵੈਲਯੂ ਓਰੀਐਂਟਿਡ ਸਵੈ-ਵਿਕਾਸ ਕੈਂਪ, ਵਰਕਸ਼ਾਪਾਂ ਵਿੱਚ ਹਿੱਸਾ ਲੈਣ ਦਾ ਮੌਕਾ ਮਿਲਦਾ ਹੈ ।

ਯੁਵਕ ਪ੍ਰਦਰਸ਼ਨੀ, ਸੱਭਿਆਚਾਰਕ ਪ੍ਰੋਗਰਾਮ ਵਿੱਚ ਜਾ ਸਕਦੇ ਹਨ।

NSS ਵਾਲੰਟੀਅਰਾਂ ਲਈ ਰਾਜ ਪੱਧਰ/ਜ਼ਿਲ੍ਹਾ ਪੱਧਰੀ ਪੁਰਸਕਾਰ ਵੀ ਸਥਾਪਿਤ ਕੀਤਾ ਜਾ ਸਕਦਾ ਹੈ

NSS ਵਾਲੰਟੀਅਰਾਂ ਨੂੰ ਰਾਸ਼ਟਰੀ ਪੱਧਰ 'ਤੇ ਇੰਦਰਾ ਗਾਂਧੀ ਪੁਰਸਕਾਰਾਂ ਲਈ ਨਾਮਜ਼ਦ ਕੀਤਾ ਜਾ ਸਕਦਾ ਹੈ।

ਜੇਕਰ ਵਲੰਟੀਅਰ NSS ਵਿੱਚ 2 ਸਾਲ ਪੂਰੇ ਕਰਦਾ ਹੈ ਅਤੇ ਯੂਨੀਵਰਸਿਟੀ ਦੇ ਵਾਈਸ ਚਾਂਸਲਰ ਦੁਆਰਾ ਹਸਤਾਖਰਿਤ ਸਰਟੀਫਿਕੇਟ ਪ੍ਰਾਪਤ ਕਰ ਸਕਦਾ ਹੈ।

ਸੋ ਅੰਤ ਵਿੱਚ ਅਸੀਂ ਕਹਿ ਸਕਦੇ ਹਾਂ ਕਿ ਐੱਨ ਐੱਸ ਐੱਸ ਵਿਦਿਆਰਥਣਾਂ ਲਈ ਸਰਵਪੱਖੀ ਵਿਕਾਸ ਲਈ ਲਾਭਦਾਇਕ ਹੈ।ਉਹ ਖੇਤਰ ਭਾਵੇਂ ਪੜ੍ਹਾਈ, ਨੌਕਰੀ ਜਾਂ ਸਮੁੱਚੀ ਸ਼ਖ਼ਸੀਅਤ ਨਾਲ ਸੰਬੰਧਿਤ ਹੋਵੇ।

Reference Books

(1) https//www sipdanta.ac.in

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TOPIC: THE IMPORTANCE AND PRACTICAL APPLICATIONS OF MATHEMATICS IN VARIOUS FIELDS.

ABSTRACT:

Mathematics is a way of life. One cannot even imagine life without it. It is just like a spinal cord for all other subjects. It is so much applicable in our daily life that we even do not feel it. Sometimes like waking up at a particular time, driving with a proper speed, making or preparing food with proper measurements, sewing clothes with proper sizes, taking medicines with proper doses, making buildings, ornaments, etc. So on, what thing to leave? All use mathematics. Mathematics is a practical subject. But nowadays, students are taught mathematics more theoretically than its practical values. They learn only proven results without knowing how these come & what are their practical values. In this paper, practical values of mathematics have been told and the significance of teaching the practicality of maths in other fields. Mathematics is not just a subject taught in schools; it is a universal language that governs our daily activities, professions, and scientific advancements.

MATHEMATICS AS A PRACTICAL SUBJECT:

Mathematics is inherently practical. However, in modern education, it is often taught as a theoretical subject, detached from its real-world applications. Students are expected to memorize formulas and solve equations without understanding their practical significance. They learn proven results without knowing how these results were derived or how they can be applied in daily life and various fields of study. This gap between theory and practice has made mathematics seem difficult and uninteresting to many learners.

Instead of focusing only on theoretical concepts, students should be encouraged to explore the real-world applications of mathematics. They should be taught how mathematical principles influence various industries such as engineering, economics, medicine, physics, astronomy, and even social sciences. Understanding how mathematics works beyond the classroom will not only increase students' interest in the subject but also help them develop problem-solving skills essential for their future careers.

1. INTRODUCTION:

Maths is not just maths. It is Astrology, it is Astronomy, it is Chemistry, it is Physics, Computers, Statistics, Economics, Medicine & so on. Students are mostly taught mathematics in a theoretical way. They learn formulas and rules, but they do not understand how to use them in real life. This makes mathematics boring and difficult for many students. They do not see how useful it is. This paper explains how mathematics is used in different fields and why it should be taught in a practical way.

1.1. MATHS & ASTRONOMY (EXPLORING THE UNIVERSE):

In ancient times, people looked at the sky to understand time and seasons. They noticed the movement of the sun, moon, and stars. Astronomers, who studied the sky, used maths to measure distances between planets, calculate their sizes, and predict eclipses. They also discovered that the Earth is round and not flat. Without maths, they could not have made these discoveries. Even today, maths is very important in astronomy. Scientists use it to study planets, stars, and galaxies. They use numbers to measure the speed of light, the size of black holes, and the time it takes for a spaceship to travel. Astronomers also use maths to make maps of space and to find new planets.

Maths helps in sending rockets and satellites into space. Scientists calculate how much fuel a rocket needs, how fast it should travel, and where it should land. Without these calculations, space missions would fail. Even GPS (Global Positioning System), which helps us find places on Earth, works because of satellites and maths. Space agencies like NASA and ISRO use maths every day. Without maths, we would not know much about the universe.

1.2. THE ROLE OF MATHEMATICS IN ASTROLOGY: CALCULATIONS AND PREDICTIONS:

Astrology is the study of how stars and planets affect human life. Long ago, people believed that the position of the stars and planets could tell them about their future. They used maths to track the movement of the sun, moon, and planets. This helped them create calendars and find important dates for festivals and events. Astrologers use numbers and dates to make predictions. They calculate a person's birth chart using maths. This chart shows the position of planets at the time of birth. Many people believe this chart can tell about a person's personality, job, and relationships.

Astrology also uses mathematical concepts like angles and time. For example, astrologers use angles to understand how planets affect each other. They also use calculations to find the best time for important events like weddings or business deals. Even though science does not fully support astrology, many people still follow it. They check their horoscopes daily in newspapers and online. In some cultures, people make big decisions based on astrology, such as choosing a career or a life partner. Even today, maths plays a big role in astrology.

1.3. MATHS AND CHEMISTRY:

Chemistry is the science of different substances and how they mix. Scientists use maths to measure and mix chemicals correctly. If they use the wrong amount, the reaction may not work or could be dangerous. For example, when making medicine, a small mistake in measurement can be harmful. Maths is important in chemistry because it helps in calculating formulas, weights, and volumes. When scientists create new materials like plastic, paint, or metal, they use maths to test if they are safe and useful. They also use maths to check how much heat or cold a substance can handle.

In factories, maths helps workers mix chemicals to make products like soap, perfume, and food items. It also helps in controlling the quality of products so that they are safe to use. For example, when making a soft drink, the right amount of sugar, water, and gas must be added. Too much sugar can make the drink unhealthy, and too little gas can make it taste flat. Chemists also use maths in research. They study how fast a reaction happens and how much energy is used. This helps in creating new inventions, like better batteries and eco-friendly fuels

1.4. MATHEMATICS AND PHYSICS: THE FOUNDATION OF SCIENTIFIC LAWS:

Physics is something that revolve about the study of how the things move and how they work. It explains why objects fall, how energy is used, and how light travels. Maths is a very important part of physics because it helps in measuring speed, force, and distance. Without maths, it would be hard to understand how the world works. For example, when we throw a ball, we can use maths to find out how far and how fast it will go. Engineers use physics and maths to design buildings, cars, and airplanes. They calculate the weight of materials, the strength of bridges, and the speed of moving objects.

Electricity also follows mathematical rules. When we turn on a fan or charge a mobile phone, maths is used to measure voltage and current. Even sound and music follow maths. Musicians use maths to create beats and rhythms. Physics and maths help scientists explore space. They calculate the speed and direction of rockets. They also use maths to study weather patterns and predict natural disasters like earthquakes and tsunamis. Maths makes physics easier to understand and apply in real life.

1.5. THE POWER OF MATHEMATICS IN COMPUTING AND TECHNOLOGY

Computers are built using maths. Every website, mobile app, and video game is created using numbers and codes. Programmers use maths to write instructions that tell computers what to do. Without maths, computers would not work. Maths helps in solving problems quickly. It is used in artificial intelligence, where computers learn and make decisions. It also helps in cybersecurity, where codes are used to protect personal data.

In banks, maths helps computers handle millions of transactions every day. It also helps in online shopping, where prices, discounts, and delivery times are calculated. Even social media apps use maths to show posts, videos, and advertisements based on user preferences. Computer graphics, used in movies and games, depend on maths. Animations, 3D models, and special effects are created using mathematical formulas. Video streaming services like YouTube and Netflix use maths to recommend videos to users. Maths also plays a role in machine learning and robotics. Robots are programmed using maths to perform tasks like cleaning, driving, and even doing surgery. Computers and technology would not be possible without maths.

1.6. MATHS AND IT USAGE IN STATISTICS

Statistics is the study of numbers and data. It helps people understand patterns and trends. Governments, businesses, and scientists use statistics to make important decisions. For example, businesses use statistics to find out which product is selling the most. They collect data on customer choices, prices, and sales. This helps them improve their products. Governments use statistics to plan budgets, build hospitals, and improve schools. Statistics also helps in sports. Coaches use it to track the performance of players. It is also used in weather forecasting to predict rainfall, storms, and climate changes. In medicine, statistics help doctors study diseases. They collect patient data to find the best treatments. It is also used in vaccine research and testing. Statistics is everywhere. It helps in predicting the future, improving industries, and making better choices.

1.7. MATHS & SOCIAL SCIENCES

Social sciences study people and society. Maths helps in understanding population growth, crime rates, and voting patterns. Governments and organizations use maths to study how people behave and what they need. For example, in economics, maths helps in studying money, trade, and business. It helps in calculating profits, losses, and taxes. In psychology, maths helps in understanding human behaviour through surveys and experiments. Maths is also used in geography to measure land areas, map locations, and track climate changes. In history, dates and timelines use maths to arrange events correctly. Social sciences depend on maths to solve problems like poverty, unemployment, and pollution. By using maths, societies can grow and improve

2. PRESENT CONDITION IN MATHS SUBJECT

Maths is a very important subject, but today it is not taught in a way that helps students understand its real value. In most schools, students learn maths just by memorizing formulas and solving problems from books. They

do not know how to use these formulas in real life. This makes maths feel difficult and boring for many students. Instead of only solving equations on paper, students should learn how maths helps in daily life and different jobs.

For example, calculus is an advanced topic in maths. Many students think it is only useful for exams, but calculus is used in real life. It helps engineers design bridges and buildings. It helps doctors understand how diseases spread. It also helps in business by predicting sales and profits. If students learn how calculus is useful, they will find it more interesting.

Another important topic in maths is differentiability, which tells us about the rate of change. This is very useful in economics. If the demand for a product increases, then the supply also changes. Businesses use this concept to set prices and manage their products. For example, if a company knows how much customers want a product, they can produce the right amount. This prevents waste and reduces costs.

Probability is another important part of maths. The probability talks about the chances of happening something. This is useful in many fields. In weather forecasting, probability helps predict if it will rain or not. In sports, probability helps teams decide their strategies. In business, companies use probability to decide if they should launch a new product. Governments also use probability in planning budgets and policies to improve the economy. If students understand these practical uses, they will see why probability is important.

Maths is also important in the field of medicine. Doctors use maths to measure medicine doses for patients. Hospitals use maths to manage the number of beds and staff needed. In medical research, maths helps scientists find better treatments for diseases.

In the technology field, maths is the base of computers and programming. Every app and website is created using maths. Without maths, we would not have mobile phones, video games, or social media.

In daily life, people use maths without even thinking about it. When we go shopping, we calculate prices and discounts. When we cook, we measure ingredients. When we travel, we calculate distance and time. Even in personal finance, maths helps us save money and plan expenses.

But in schools, students are not taught these practical uses of maths. They only solve exercises from textbooks, which makes them feel that maths is not useful. If teachers show how maths is used in real life, students will enjoy learning it more.

Schools should include more real-world examples in maths classes. They should teach students how to apply maths in business, science, medicine, and daily activities. If students see how maths is useful, they will find it more interesting and important for their future.

FUTURE SCOPE

The future of mathematics is vast and limitless, as it continues to evolve with advancements in science and technology. In the coming years, mathematics will play an even greater role in fields such as artificial intelligence, machine learning, and data science. With the rise of automation and digital transformation, industries will require professionals who can apply mathematical concepts to analyze data, develop algorithms, and create intelligent systems. The increasing use of artificial intelligence in healthcare, finance, and cybersecurity further highlights the need for strong mathematical foundations.

In space exploration, mathematics will be crucial for planning future missions to Mars, developing space stations, and discovering new planets.

Scientists and engineers will rely on mathematical calculations to design spacecraft, measure distances, and navigate through space. Similarly, in medicine, mathematics will help in disease prediction, drug discovery, and personalized treatment plans based on genetic data.

In addition, the future of mathematics education is likely to see more technological integration. Virtual reality (VR), artificial intelligence, and interactive simulations can make learning mathematics more engaging and practical. Students will be able to experience real-world applications through digital models, making the subject more accessible and enjoyable.

Furthermore, as global challenges such as climate change and economic crises grow, mathematics will be essential in developing solutions. Mathematical models can help predict climate patterns, optimize resource use, and improve economic stability. The future belongs to those who understand and apply mathematics, making it one of the most valuable skills in the modern world.

CONCLUSION

Mathematics is not just a subject studied in classrooms; it is a universal tool that plays a crucial role in all aspects of life. From understanding the movement of planets to designing modern technology, mathematics forms the foundation of scientific and technological advancements. It is used in fields like astronomy, physics, chemistry, medicine, engineering, finance, and computing, proving that no profession or industry can function efficiently without it.

Despite its importance, many students find mathematics difficult and boring because they are taught theoretical concepts without understanding their real-world applications. This gap between theory and practice reduces interest and limits creativity. When students see how mathematics is used

in practical situations, such as predicting weather, developing medicines, or programming computers, they begin to appreciate its value. Therefore, mathematics education should focus on practical learning, problem-solving, and real-life applications.

Furthermore, as the world advances, the demand for mathematical skills is increasing. Whether it is artificial intelligence, robotics, space exploration, or financial modelling, mathematics remains essential. Encouraging students to see the practical side of mathematics will help them develop critical thinking and analytical skills, which are needed for future careers. By integrating real-world applications into mathematics education, we can inspire more students to explore its potential and make significant contributions to society. In conclusion, mathematics is not just about numbers and formulas—it is about solving real problems and shaping the future of the world

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SUSTAINABILITY: GREEN CHEMISTRY AS A GUIDING PRINCIPLE FOR THE DEVELOPMENT OF HARMLESS CHEMICAL

INTRODUCTION

With the passage of time term green chemistry is becoming more and more important to tackle the environmental issues. So many Environment protection agencies are working to achieve the goals of environmental protection and sustainable development. It is the need of hour to use natural or safer chemicals for pollution prevention instead of the use of hazardous materials. We know chemistry play very important in chemical industry, where the synthesis of compounds may involve tons of harsh chemicals. We can synthesize these compounds by following guiding principles of green chemistry. We can run the reactions in safer aqueous based system instead of hazards organic solvents. We can carry out the reactions at ambient temperature instead of with applied heat. Also, various harmful by products could be reduced by utilising alternative approaches to synthesize common synthetic products. Some of the guiding principles of green chemistry are: Design chemical reactions to prevent wastage, Maximize the amount of starting material, use fewer toxic chemicals, use of eco-friendly solvents and processes, monitor reactions to prevent the release of harmful gases etc. By adoption of green chemistry, we can significantly reduce pollution and hazardous waste.

Now a lot of approaches are being made in the laboratory particularly at the undergraduate level to make students understand the meaning of green and safe chemistry.

Green chemistry is based on following principles:

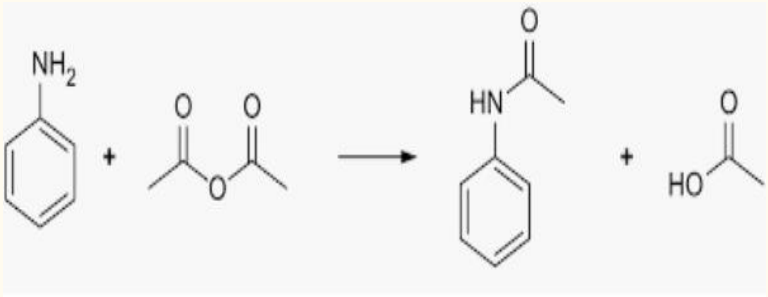
- **Waste prevention: Design chemical reactions to minimize waste**
- **Atom economy: Maximize the number of starting materials that are incorporated into the final product.**
- **Less hazardous chemicals: Use substances that are less toxic to humans and the environment Safer products: Design products that are effective but have little to no toxicity.**
- **Safer solvents: Use safer solvents and reaction conditions.**
- **Energy efficiency: Run reactions at room temperature and pressure when possible.**
- **Renewable feedstocks: Use renewable materials.**
- **Avoid chemical derivatives: Minimize the use of temporary modifications, blocking groups.**
- **Catalysts: Use catalytic reactions to minimize waste.**
- **Design for degradation: Design products to break down into harmless substances after use.**
- **Real-time pollution prevention: Monitor reactions in real time to prevent the release of hazardous substances.**

Experimental

Application of green chemistry in organic synthesis: A few examples of common preparations are given below and how these could be made safer and environment friendly is also described.

1. Preparation of Acetanilide:

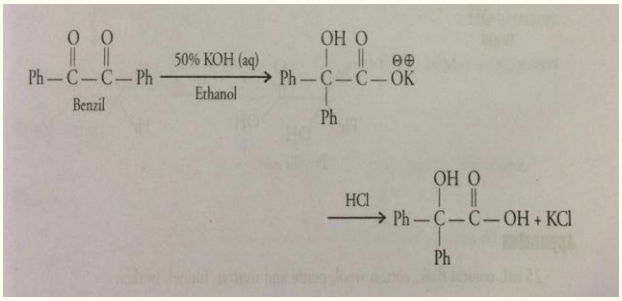
Conventional method: Non green solvent dichloromethane is used; Pyridine is toxic and is not eco-friendly. Acetic anhydride leaves one molecule of acetic acid unused which devoid the rule of atom-economy .



Greener approach: This utilizes heating aniline, zinc dust in acetic acid for 2 hrs. Further reaction mixture is poured in water and crystals are collected by filtration. This method does not involve acetic anhydride, hazardous solvent, less waste products.

2. Preparation of Benzilic Acid :

Conventional method: Benzil reaction with KOH and ethanol gives Benzilic acid. Not atom efficient, solvents are used.



Greener approach: Benzil and solid NaOH or KOH are powdered in a mortar which is taken in a dry conical flask and heated on a water-bath for 20 minutes. Then it was cooled to room temperature dissolved in minimum amount of water, acidified. The precipitated benzilic acid was filtered, a solvent free approach.

CONCLUSION

There is a need to change or modify the conventional methods which are not eco-friendly, utilize hazardous solvents that does not matches green chemistry principles. This could be useful for the safe being of students also.

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MATHEMATICS IN ARTIFICIAL INTELLIGENCE

Introduction:

Mathematics plays an important role in the development of the Artificial Intelligence or simply AI. AI is a rapidly growing field that aims to create the machines capable of matching human intelligence. To achieve this, mathematicians and computer scientists use many mathematical branches such as the logic, set theory, probability, and the linear algebra. These fields help to design the AI systems that can think, that can learn and that can make decisions like us humans. In this article, we will explore how these different areas of mathematics contribute to AI and its problem-solving capabilities.

1. Logic: The Basis of Reasoning

Logic is the branch of mathematics that deals with the reasoning and the principles of valid inference. It is one of the most fundamental areas of mathematics used in AI. AI systems must be able to reason about the information to make the decisions. For example, consider a simple AI system that is designed to play the game chess. To decide the next best, move the AI must use logical reasoning to find all possible moves and choose which one will be best to victory.

In AI there are 2 most common used logic namely propositional logic and predicate logic. Propositional logic deals with the statements that are either true or false and on the other hand predicate logic extends the propositional logic by dealing with the objects and their relationships. AI uses these logics to model the knowledge, to make the inferences and also for problems solving.

For example: Logic is used to help the robot understand and process the information about its environment in a robot navigation system. If a robot

knows that "If there is an obstacle, I will stop," it can make decisions based on that logical rule when it detects an obstacle.

2. Set Theory: Organizing and Categorizing Information

Set theory is another important mathematical branch in Artificial Intelligence. A set is a collection of unique objects and set theory helps in organising and also categorising the information. In AI sets are used to represent the different types of data such as the groups of objects, their actions or the conditions.

For example: when an AI system is used in image recognition it can organize different objects in an image into sets. It might have one set for "dogs," another set for "cats," and so on. By using set theory, the AI can easily compare and distinguish between different categories which is important for tasks like identifying objects in a picture.

Also, the fuzzy sets are also used in AI to handle uncertainty. In traditional set theory it is think that an element may belongs to a set or may does not belong to set. But in the fuzzy set theory an element can partially belong to a set. This is useful in the cases where information is incomplete or uncertain such as when a machine is unsure whether a picture contains a cat or a dog.

3. Probability: Dealing with Uncertainty and Predictions

Probability theory is important in the AI because real world data is most of the time uncertain and incomplete. AI systems must be able to make decisions and predictions based on uncertain information. Probability helps AI systems model this uncertainty and make informed choices.

One of the most important concepts in AI that uses probability is Bayesian inference. Bayesian methods allow AI systems to update their beliefs based on new evidence.

For example: If an AI system is tasked with diagnosing a disease based on symptoms it can use probability to calculate the likelihood of each possible disease. As new symptoms or information are provided, the AI updates its beliefs about which disease is most likely.

In machine learning the probability plays a central role in algorithms like Naive Bayes classifiers which use probability to classify data. For example, in the spam email detection a Naive Bayes classifier looks at the probability of certain words appearing in spam emails and uses this information to classify new emails.

4. Linear Algebra: The Power Behind Machine Learning

Linear algebra is the branch of mathematics that deals with the vectors, matrices and linear transformations. In Artificial Intelligence the linear algebra is commonly used especially in the machine learning and the deep learning. Machine learning algorithms like the neural networks involve mathematical operations on large datasets and linear algebra provides the tools to process and manipulate these datasets efficiently.

For example: In a neural network, the data is represented as the vectors and matrices. Each layer of the neural network transforms these vectors through matrix multiplication and non-linear functions to make predictions. Linear algebra helps AI systems efficiently perform these operations making the learning process faster and more accurate.

5. Calculus: For AI Models

AI models are designed using mathematics especially differential calculus. In machine learning artificial intelligence systems often has to figure out the best settings such weights in neural networks in order to reduce errors while improving predictions. Calculus helps in this process of optimization by identifying the locations with the lowest error.

For example: Calculus is used in the gradient descent process to modify the parameters of a machine learning model in order to decrease error. The AI determines the error function's gradient, often known as its slope, and proceeds in the path that minimizes the error. The AI system can produce precise predictions as a result of this process which keeps going until the mistake is reduced.

6. The Role of Mathematics in AI Problem Solving

Mathematics provides us a solid foundation for the problem-solving in AI. By combining logic, set theory, probability, linear algebra and calculus AI systems are able to understand problems, make informed decisions and learn from the experience.

Role of Mathematics in AI Problem Solving:

a. Logic helps AI systems make inferences and reason about knowledge.
b. Set theory allows AI to categorize and organize data.
c. Linear algebra powers machine learning algorithms by allowing efficient data processing
d. Calculus helps AI optimize its models to improve performance.
e. Probability enables AI to handle uncertainty and make predictions.

Each of these mathematical areas contributes to creating intelligent systems that can perform complex tasks from playing games to diagnosing diseases.

Future Scope:

Mathematics plays a fundamental role in the development of Artificial Intelligence. As AI continues to grow the importance of mathematical concepts will only increase. Key areas of mathematics, such as linear algebra,

probability, statistics and calculus are very important for AI algorithms, machine learning models and deep learning networks.

In the future advanced mathematical techniques will help improve AI efficiency and accuracy. Linear algebra will continue to be crucial for data representation in neural networks, while probability and statistics will enhance decision-making in AI systems. Calculus will contribute to optimization techniques used in machine learning models. Additionally, fields like graph theory and discrete mathematics will be applied in AI-driven search engines, robotics, and natural language processing. Mathematics will also play a key role in explainable AI, ensuring AI systems provide transparent and interpretable results. As AI expands into fields such as healthcare, finance, and automation, advanced mathematical models will help develop more reliable and ethical AI solutions. With increasing advancements, AI researchers and developers will require a strong mathematical background to create innovative and intelligent systems.

Conclusion:

Mathematics is at the heart of Artificial Intelligence and without its various branches we may not be able to develop the intelligent systems that we see today. Whether it is through logic for reasoning, set theory for organizing data, probability for handling uncertainty, linear algebra for data manipulation, or calculus for optimization, mathematics enables AI systems to think, learn, and solve problems. As AI continues to evolve, the role of mathematics will only become more important in shaping the future of intelligent machines.

By understanding and applying these mathematical concepts, we can create AI systems that are not only smarter but also more efficient and reliable. Therefore, the relationship between mathematics and AI is a perfect example of how abstract concepts in math can lead to real-world advancements in technology.

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CHEMISTRY OF SOAP

Soap is a widely used chemical compound that plays a crucial role in cleaning and hygiene. It is produced through a process called saponification, which involves the reaction of fats or oils with a strong alkali, such as sodium hydroxide (NaOH) or potassium hydroxide (KOH). The result of this reaction is soap and glycerol (glycerin). Chemically, soap is the salt of a fatty acid, and its cleaning action is based on its ability to emulsify grease and oils in water.

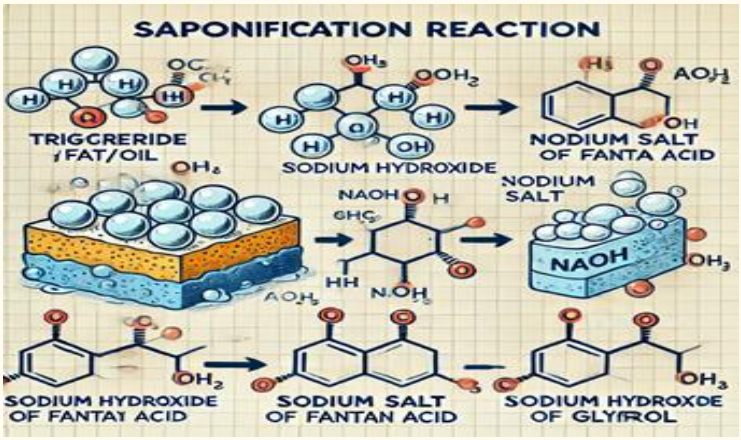
The saponification process occurs when triglycerides (fats or oils) react with an alkali. Triglycerides are esters composed of glycerol and three fatty acids chains. When an alkali is added, the ester bonds break, forming soap and glycerol. The general reaction for saponification can be represented as follows:

Here, $C_3H_5(O_2CR)_3$ represents a triglyceride, NaOH is sodium hydroxide, $RCOO^-Na^+$ is the soap (sodium salt of a fatty acid), and $C_3H_5(OH)_3$ is glycerol. If potassium hydroxide (KOH) is used instead, the resulting soap is softer and often liquid.

A soap molecule consists of two distinct parts: a hydrophobic tail and a hydrophilic head. The hydrophobic tail is a long, non-polar hydrocarbon chain that repels water but is attracted to oils and grease. The hydrophilic head is a polar carboxylate ($-COO^-Na^+$) group that dissolves in water. This unique structure makes soap an effective surfactant, reducing the surface

tension of water and allowing it to mix with non-polar substances like oils and dirt.

When soap is mixed with water, the molecules arrange themselves into spherical structures called micelles. In a micelle, the hydrophobic tails group together in the centre, trapping grease and dirt, while the hydrophilic heads remain on the outside, interacting with water. This process allows soap to lift and emulsify oils, making them easier to rinse away. The cleaning action of soap is based on ability of micelles to surround and suspend non-polar substances in water.



Soap reacts differently in hard water, which contains high concentrations of calcium (Ca^{2+}) and magnesium (Mg^{2+}) ions. These ions react with soap to form insoluble precipitates, commonly known as soap scum:

This reaction reduces the effectiveness of soap because it prevents proper lathering. To overcome this problem, synthetic detergents, which do not

form precipitates in hard water, are often used in laundry and dishwashing applications.

Different types of soap exist based on their chemical composition. Sodium-based soaps are hard and commonly used in bar soaps for bathing, while potassium-based soaps are softer and used in liquid soaps and shaving creams. Some soaps contain additional ingredients such as antibacterial agents or glycerin to provide specific benefits, such as moisturising the skin or killing bacteria.

Soap remains an essential chemical compound due to its ability to remove dirt, grease, and bacteria. Its effectiveness is based on its amphiphilic nature, which allows it to interact with both water and oils. Despite challenges like soap scum formation in hard water, soap continues to be widely used in households and industries, with continuous advancements improving its formulation and effectiveness.

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