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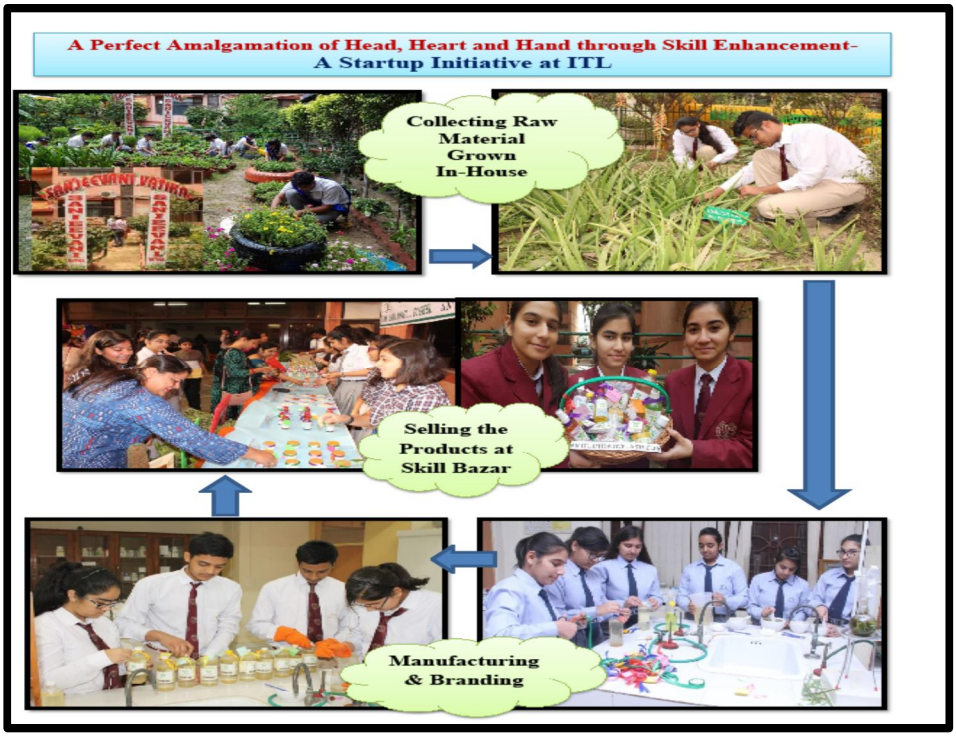
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Anthelia

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Abstract: ***Modern times are marked with the unbridled use of chemicals which we hardly take cognizance of! Oblivious of its obvious & subtle presence in our lives, we tend to ignore the devastating impact of the chemicals on the environment. As we cannot afford to turn away from this fact, it's time to bring this realization to our students that they have ownership towards the well-being of our environment which would invariably bring wellbeing to mankind. To reduce the environmental issues due to the toxic effects of these chemicals, and to encourage the use of natural products, the students of ITL Public School have taken the initiative to prepare Eco-friendly Innovative products free from toxic preservatives (paraben, triclosan, etc.) under the brand name Anthelia, a human story trending on the path of Prosperity of "People" & the "Planet".***

Anthelia - a start-up initiative by ITLeens was launched to provide the students with hands-on experiential learning in product development apart from developing marketing strategies and entrepreneurship skills.

This initiative assumed an interdisciplinary approach by involving students of all domains of Science, Commerce, and Humanities in the production network. This extraordinary feat with a comprehensive approach was attained by involving a maximum number of students as prospective input providers, irrespective of their age.

Keywords: Entrepreneurship skills. Natural products, experiential learning, interdisciplinary approach.

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I. INTRODUCTION

A. *Educational Objectives*

1) To advise and educate effectively and to create a comprehensive Health and Wellness plan to incorporate herbal ways in lifestyle.
2) To demonstrate basic skills required for herb identification and preparation.
3) To understand Drug design, testing, and use of the products.

B. *Specific Objectives*

1) This start-up initiative aims to nurture the idea of Social Entrepreneurship skills among the students and thereby to make a Healthier Transition towards a Nature-based Sustainable Development (SDG-3).
2) This project also aims to save the environment from the use of harmful chemicals and preservatives.

C. *Purpose*

1) The motto of this project was to honour the Prime Minister's vision of empowering the youth with skills and efficiency, a pre-requisite for leading an independent, confident and respectable life.
2) The purpose of this project is also to create a Scientific Temperament among the students. Thus, initiating a Holistic Development by encouraging reflection about the experience to develop cognitive skills, intellectual abilities, team spirit, and social skills.

D. *Scientific Principle Involved*

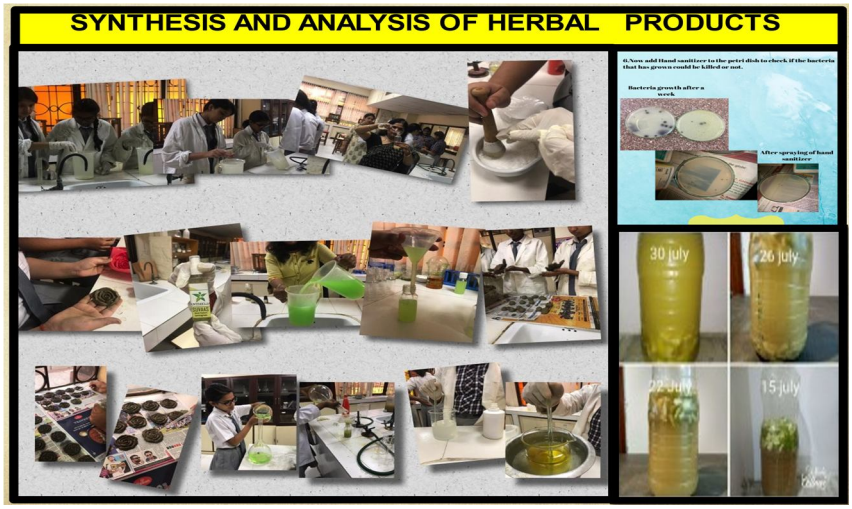
To establish a chemical-free environment by using the knowledge of Ayurveda, utilizing the healing properties of Mother Earth to the fullest, and preparing products that are gentle, non-toxic, skin-friendly, and safe to use.

II. MATERIALS AND METHODOLOGY

Anthelia believes that constant research and experiments are needed for the development of herbal products, which addresses different societal issues like sanitation and cleanliness (Hand Sanitizer, Mosquito Repellents, Floor Cleaners, Glass Cleaners, Insect Repellents, Soaps, Flush Pods, Toilet Seat Sanitizer, Room Freshener) in addition to personal care (Shampoo, Hair Oil, Cream) and neurologically active products (Pain Reliever, Analgesic Bath Jars). Therefore, the number of raw materials and natural ingredients used in this venture is also quite diverse.

To commence the process, several competitions across all age groups for classes VI-XII were organized to generate an idea pool of products, in which students showcased their innovation and creativity. The indigenous raw materials from the school herbal garden Sanjeevani Vatika were procured with utmost care following all the safety guidelines. Different scientific techniques like distillation, steam distillation, etc. to obtain rosewater and lemongrass extract. The **processing** of raw materials was done under the teacher's supervision and the final products were prepared maintaining high hygiene levels in the school laboratory.

This venture presents an entire spectrum of products that have unique preparation methods.



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A. Antimicrobial Products

These products have Antiseptic, Antifungal, Antibacterial, and Disinfectant properties that act against microorganisms.

1) Herbal Hand sanitizer is prepared by mixing Aloe Vera gel, Rosewater, lemongrass extract, essential oils, and vitamin E.

2) Floor cleaner, a natural Disinfectant is prepared by stirring lemongrass extract, Citrus Pine Oil, Camphor, Rock salt, and Potash Alum in distilled water.

3) Mosquito repellent is made by dissolving camphor powder in neem oil.

4) Organo-charcoal hand wash and Herbal Soap are synthesized by saponification reaction between coconut oil and potassium hydroxide. Almond oil along with other essential oils and vitamin E are added to keep the hands moisturized. Adding activated charcoal enhances the cleaning property of handwash and soaps.

5) We Safe - Toilet Seat Sanitiser is prepared by mixing distilled water, white distilled vinegar, isopropyl alcohol, lemon, vanilla essence, etc.

6) Enzymatic All-purpose Cleaner -A natural surface cleansing agent for glass, wood, metal, etc. which is synthesized by a fermentation process using distilled water, yeast, brown sugar, and citrus peels.

7) Room Freshener gives a long-lasting fresh fragrance to the room, is made by mixing distilled water, baking soda, and essential oils.







B. Cosmetic and Beauty Care Products

These skin-friendly products are Antioxidant, Antibacterial, Anti-inflammatory, Exfoliative, Hydrating, Moisturizing, and Nourishing.

1) Herbal Moisturizing cream, shampoo, and lotion bars are prepared using rose water, olive oil, coconut oil, almond oil, vitamin E, Vitamin -B Complex, Shea butter, cocoa butter, beeswax, and essential oils.

2) Herbal hair oil is prepared using almond oil, castor oil, Olive oil, Hibiscus oil, coconut oil, curry leaves, Triphala powder, onion seeds, flaxseeds, fenugreek, etc.·





C. Neurologically Active Products

These products have Analgesic and Stress-relieving properties.

1) Analgesic Bath- Jar is manufactured by using high-grade baking soda, citric acid, Epsom salt, and corn-starch.

2) Aromatherapy Pain Reliever Roll-on is prepared using essential oils such as avocado oil, lavender oil, geranium oil, clary sage oil, etc. It also helps to reduce menstrual cramps.



D. Testing and Analysis

In-house preliminary testing was done at a basic level to test the efficacy of the products. For authenticity and screening of the prepared products, tests such as shelf life, colour, odour, TFM, pH, and other physical parameters were tested using prescribed techniques, with utmost care.

The antimicrobial activity and ingredients were evaluated on different bacterial strains.

Only the products which met the desired specifications made it to the next level.

E. Packaging and Labelling

To ensure product differentiation and create brand identity, eco–friendly packaging material was used. While designing the label of the products, it was ensured that the brand name along with specific ingredients, usage, net weight, date of manufacturing, date of expiry, and MRP was printed. Thus, a well–designed label helped in attracting the attention of the prospective buyer and provided a sufficient reason to make a purchase.



III. RESULT AND DISCUSSION

Anthelia Products are prepared by using 100% non-toxic preservatives and natural ingredients which are safe, effective, useful, and provide a cleaner and safer environment. From the experiments done and explanations given, it is clear that these products are effective on different types of household bacteria like *Micrococcus, Staphylococcus, Bacillus, and Pseudomonas*.

These products have undergone screening and testing processes on all parameters and come out to be safe to put into use. A varied range of Anthelia products is displayed schoolwide in Skill Bazar with the National Vision of Kushal Bharat- Kaushal Bharat.



IV. CHALLENGES, CONSTRAINTS, AND OPPORTUNITIES

The journey of Anthelia had its own set of **challenges**. Some of the key challenges encountered were verification, standardization, safety, and efficacy of products. At times, the process faced a huge space crunch as other classes also needed the lab and faced difficulty working simultaneously. The availability of raw materials also posed a hindrance.

Constraints associated with the harvesting and handling of herbal plants, lack of research, inefficient processing techniques led to low yields and poor-quality products, difficulties in marketing, lack of equipment, etc.

But with sincere dedication, unwavering determination, and commitment students were able to successfully convert the challenges into opportunities It was quite a formidable challenge to accomplish this huge project along with regular academics but students taking the work in their stride beautifully balanced academics and the project work.

Challenges no longer remain challenges if all have the right attitude and commitment towards work.

V. SUSTAINABILITY AND FUTURE PROSPECTS

A. *Impact on Health and Environment*

1) Preservatives are used to increase the shelf life of cosmetics, body wash, soaps, hand sanitizers, disinfectants, shampoos, cleansers, and many other pharmaceutical products by preventing the growth of bacteria, fungus, mold, and yeast.

2) Several artificial preservatives like Parabens, Triclosan, Phthalates, formaldehyde are toxic and have potentially life-threatening side effects that can cause serious health hazards such as hypersensitivity, allergy, asthma, hyperactivity, neurological damage, and cancer. Sodium Lauryl Sulfate(SLS)surfactant used in personal care and cleaning products(soaps) irritate the skin, lungs, eyes and also damages the kidney and respiratory organs.

3) In striking contrast to this, the Anthelia products are devoid of artificial preservatives and consist of only natural preservatives such as essential oils, citric acid, acetic acids, Vitamin E, Vitamin C, etc. which are safer to use.

B. *Replicable and Adaptable*

1) The journey which commenced in 2016 with Herbal Hand Sanitizer continued with optimum zeal and zest and assumed a larger dimension with each passing year by the addition of new innovative research-based products. The journey gained momentum due to the consistent backup and demand by all stakeholders.

2) For adaptability, there is the need for modification of existing products using innovative ideas and techniques.

3) The vision of enhancing society is the pivotal object behind social entrepreneurship and this is being done adequately at ITL.

C. *Economic Aspects*

1) *Economical:* The products by Anthelia are affordable and provide value for money to the buyers.

2) *Cost-effective:* The entire production process is aimed at minimizing wastage of raw materials and efficient utilization of resources. The raw materials used in their preparation are natural, which reduces the running costs.

3) *Commercial Outlook:* To provide a first–hand experience on the aspects of marketing, Commerce students were given the task of labelling and packaging of the prepared commodity, targeting strategic pricing.

4) *Unique and memorable Brand identity:* Anthelia is now a well-known start-up and has valuable goodwill amongst its stakeholders. Each year our products are sent to various dignitaries, institutions and are now very popular amongst the parent community.

VI. STUDENTS IMBIBING 21STCENTURY SKILLS, BECOMING FUTURE-READY GLOBAL CITIZEN

A. *Societal Skills*

Emphasizing the importance of the immediate needs of society, the products like herbal hand sanitizers, mosquito repellents, and floor disinfectants were distributed among the underprivileged community.

All these products were in sync with the main theme of "Swachh Bharat Mission", sensitizing people towards the importance of cleanliness, specifically when faced with Silent disasters like dengue.

Even during pandemic situations (COVID-19) hand sanitizers, soaps, disinfectants helped to stop the chain of transmission of deadly pathogens from the contaminated surface and from hands to other parts of the body.



B. Competencies Emphasizing Entrepreneurship Skills

While working on the start-up Anthelia, our students have imbibed **21st-century skills** like critical, creative, and divergent thinking, problem-solving and collaborative learning. They have already tasted the flavour of being young and budding entrepreneurs.

Students learnt to focus on social or ecological change while earning money to support the green economy. They learnt to innovate when looking for a solution to a social problem.

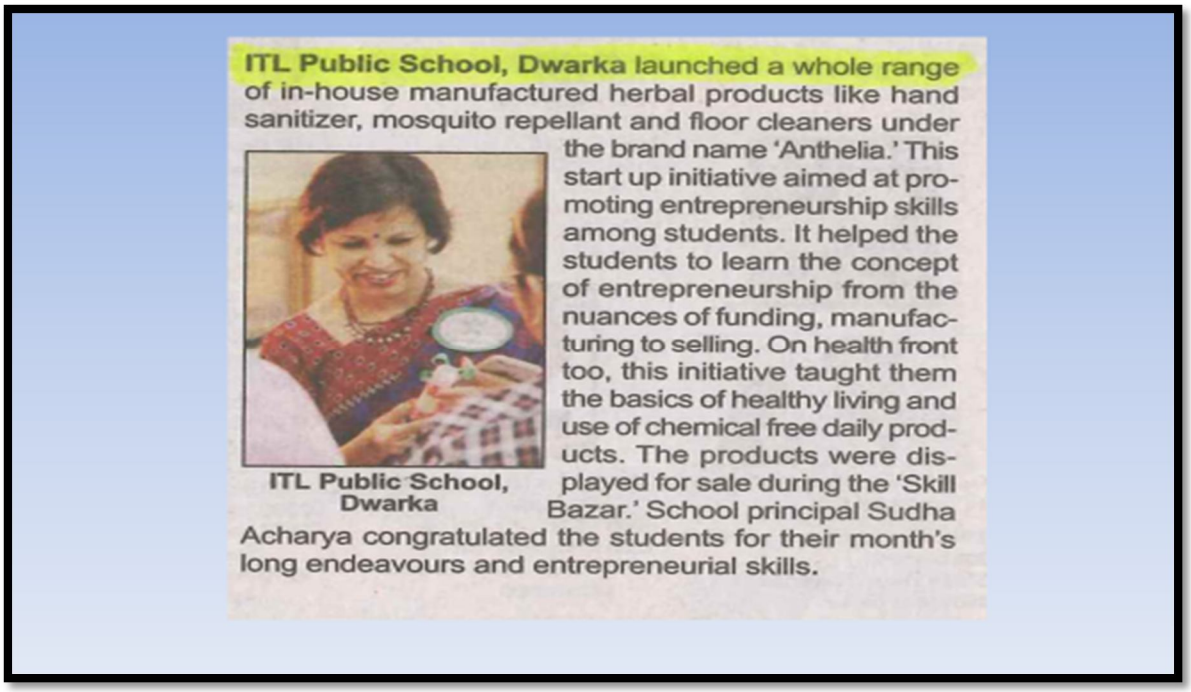


C. Sales and Marketing Skills

Marketing and Promotion of the products were assigned to the Humanities students wherein they applied different techniques of sales promotion like combo offers, providing free samples of the products to the public, and getting customer feedback from them viz-a-viz competitive products thus making the brand popular via word of mouth.

The students **applied** their arithmetic and problem-solving skills by conducting market research through a pilot survey, thus boosting their self–confidence and negotiation skills.

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ITL Public School, Dwarka launched a whole range of in-house manufactured herbal products like hand sanitizer, mosquito repellant and floor cleaners under the brand name 'Anthelia.' This start up initiative aimed at promoting entrepreneurship skills among students. It helped the students to learn the concept of entrepreneurship from the nuances of funding, manufacturing to selling. On health front too, this initiative taught them the basics of healthy living and use of chemical free daily products. The products were displayed for sale during the 'Skill Bazar.' School principal Sudha Acharya congratulated the students for their month's long endeavours and entrepreneurial skills.

ITL Public School, Dwarka

VII. LEARNING OUTCOMES

1) Create, Process, and Market products that provided them with a real-life experience of hierarchies of business strategies involved.
2) Modify existing products using innovative ideas and techniques
3) Efficiently use scientific apparatus and methods to develop the product with minimum wastage.
4) Comprehend the need for testing and authentication of any product which is prepared indigenously and how certified testing is done.
5) Use newspaper or recycled packaging paper thereby reducing the need for plastics.
6) Set up stalls in a decorative manner to attract customers for the sale of the products.
7) Participate with a positive competitive spirit in different competitions organized at the school, state, and national levels.
8) Learning interventions developed by the institutes for inculcating entrepreneurial culture should be constantly reviewed and updated.

VIII. CONCLUSION

The natural products are prepared using simple methods which required less equipment and are safe, non-toxic, eco-friendly, skin-friendly, economical along with far promising results than the commercially available products.
Anthelia brand products have utmost purity along with setting a Start-Up which enhances managerial and entrepreneurship skills.
Students learned the nuances of Funding, Manufacturing, Marketing, Pricing, Labelling, Branding, and Advertising on a large scale.

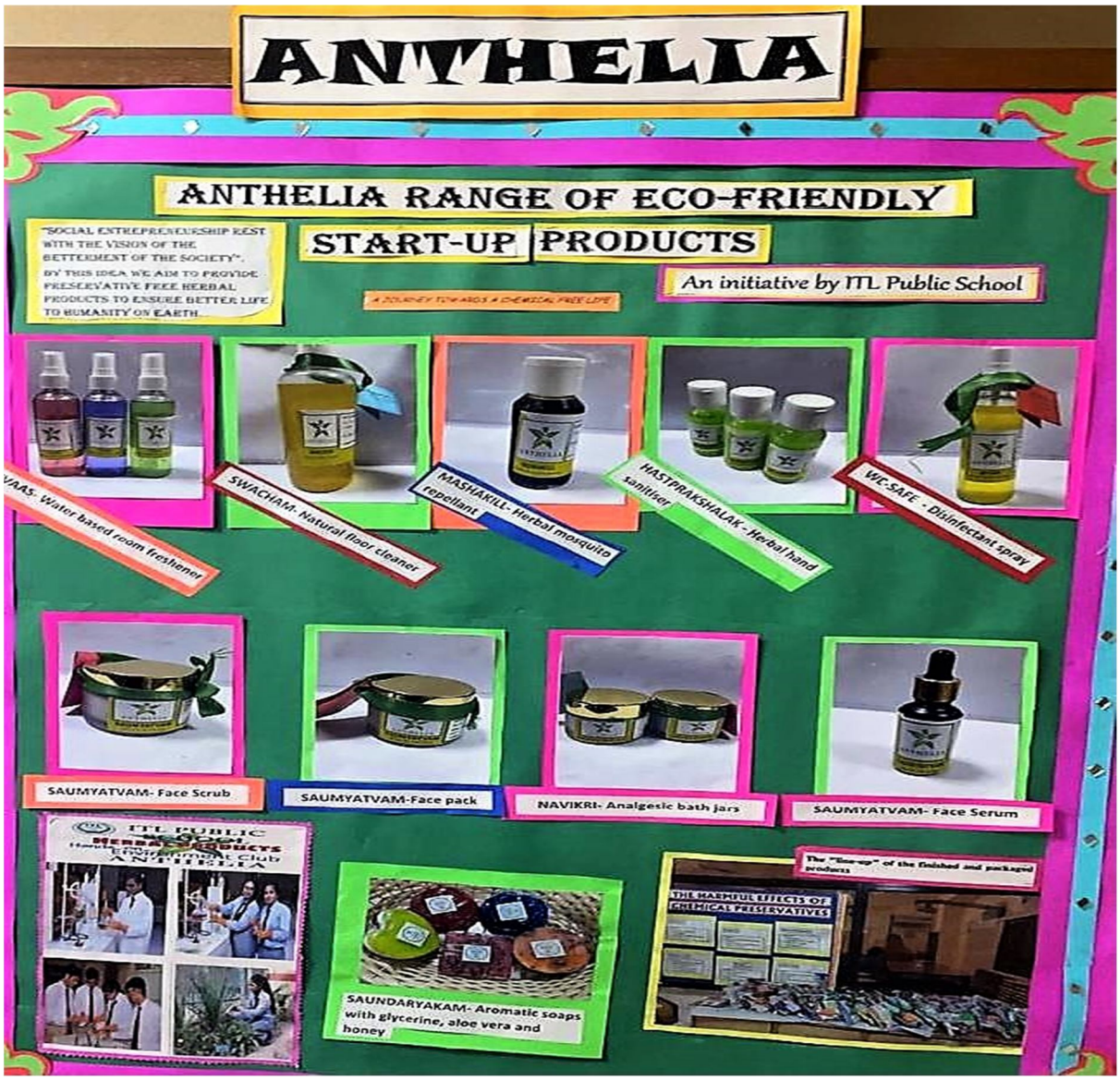
IX. ACKNOWLEDGMENT

Our sincere thanks to the Management for providing all the necessary facilities for the successful implementation and completion of the Start-Up Project.

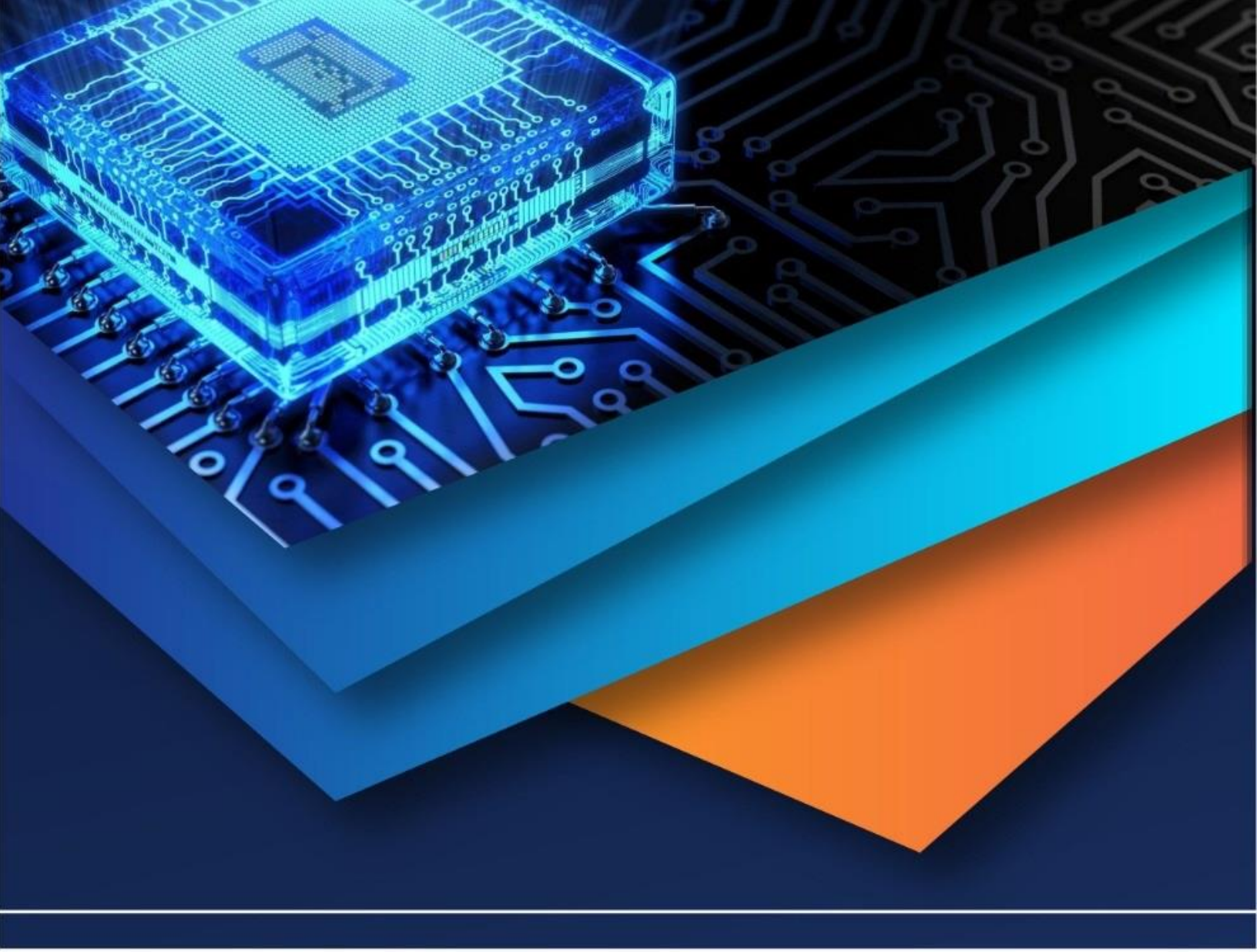
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