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India's Green Growth: A Key Initiative of Amrit Kaal

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Abstract: ***Amrit Kaal is a 25-year period starting from India's 75th Independence Day in 2022. It is a time for the country to achieve its goals of economic growth, social progress, and environmental sustainability. Green growth is one of the key initiatives of Amrit Kaal. It is an approach to economic development that reduces environmental impact and creates opportunities for green jobs. This paper is organised in two parts, first part discuses history, Key Indian initiatives towards green growth along with its prospective effects on India's path to sustainable development. We aim to shed light on how India is positioning itself as a worldwide leader in the pursuit of green growth by exploring the challenges to India's green growth, government policies, initiatives and inspirational case studies contributing toward green growth. The second part attempts to understand how micro steps taken by individuals in everyday life can contribute significantly to India's effort towards sustainable growth. It also aims to expose the gap between green policy formulation and its implementation at ground level along with providing suggestions to bridge this gap.***
Keywords: Amrit Kaal, India, Green Growth, Policies and Sustainability.

I. INTRODUCTION

The phrase "Amrit Kaal" taken from Vedic-astrology which means "Golden Age", the time when the door of heaven opens, there will be no war, no dispute between nations, population under control, no poverty, no water crisis, full employment, zero corruption, fresh air, clean water, and sustainable development. The Amrit Kaal programme is, at its core, a calculated strategy for generating economic prosperity while also tackling environmental issues, promoting social fairness, and assuring long-term sustainability.

The pursuit of sustainable development has become crucial for the world in an era characterised by rising environmental concerns, increased urbanisation, and climate change. India, one of the most populated and quickly rising nations in the world, is at a pivotal point in its quest for economic development and environmental protection. Green growth is one of the key initiatives of Amrit Kaal. It is an approach to economic development that reduces environmental impact and creates opportunities for green jobs. Green growth involves rethinking growth strategies with regard to their impact on environmental sustainability and the environmental resources available to poor and vulnerable groups. [1]

Pillars of green growth are social inclusion, economic growth, environmental sustainability, and poverty reduction.

II. OBJECTIVE

1) To study various challenges towards India's green growth mission.
2) To study the various initiatives and implication of India's green growth initiatives on its sustainable development goal.
3) To explore various "Remarkable stories from different corners of India strengthening India's green growth trajectory"
4) To study how "Micro steps taken by individuals in everyday life can contribute significantly to India's effort towards sustainable growth".

III. RESEARCH METHODOLOGY

Nature of Research	Descriptive	Exploratory
Source of data collection	Secondary (External)	Primary
Method of data collection	-	Empathy Interviews
Type of data collected	-	Qualitative data
Data analysis	-	Content analysis

1) Survey is being conducted for collecting data.
2) Type of sampling- Convenience Sampling
3) Sample size- 7
4) Scope of research- Pan India
5) Limitation of Research- Research constricted within geographical territories of India.
6) Method of data Collection- Interview

IV. LITERATURE REVIEW

A study conducted by the World Bank in 2019 found that green growth can help India achieve its economic goals while also reducing poverty and inequality. The study found that green growth could create up to 10 million new jobs in India by 2030 [2].
The study the Indian Council for Research on International Economic Relations, found that green growth could help India reduce its carbon emissions by up to 40% by 2030. The study also found that green growth could boost India's GDP by up to 1.5% by 2030 [3].
The study on Economics of Green Growth in India by the World Bank examines the economic benefits of green growth in India. The study finds that green growth can help India to reduce poverty, create jobs, and boost economic growth.
The Council on Energy, Environment and Water conducted study on Green Growth in India: Challenges and Opportunities, examined the challenges and opportunities for green growth in India. The study explained that the India has the potential to achieve green growth, but that there are several challenges that need to be addressed, such as the lack of investment in green technologies, the lack of coordination between different government agencies, and the need to improve the regulatory environment [4].
Green Growth in India: A Review carried out by the International Institute for Sustainable Development explained that there is a growing body of research on green growth in India, but that there is still a need for more research on the specific challenges and opportunities for green growth in the country [5].
The study conducted by National Council of Applied Economic Research about the Role of Green Finance in India's Green Growth explain the role of green finance in promoting green growth in India. The study explained that green finance can help to mobilize capital for green investments and to reduce the cost of green technologies [6].

A. Challenges Towards India's Green Growth

India is emerging as the one of the fastest growing economies in the world and is currently Asia's third largest economy by GDP. But for a country like India, where development is an imperative, environmental consequences can be substantial as it will place serious constraints on natural resources such as land, water, minerals, and fossil fuels, driving up energy and commodity prices. The extent to which its economy will "grow green" will depend on its ability to reduce the quantity of resources required over time to support economic growth that leads to enhancement of social equity and job creation. Green growth could play an important role in balancing these priorities. However, there are few challenges towards India's green growth mission.

1) Increasing Population

The rapid population expansion in India presents several obstacles to sustainable development and green growth. The population of the nation, which is projected to top 1.7 billion by 2050, puts pressure on several environmental and sustainability-related factors. Vital resources including water, land, and energy are under intense pressure due to the expanding population. Depletion, environmental degradation, and greater competition for scarce resources can result from the overuse and improper management of these resources.

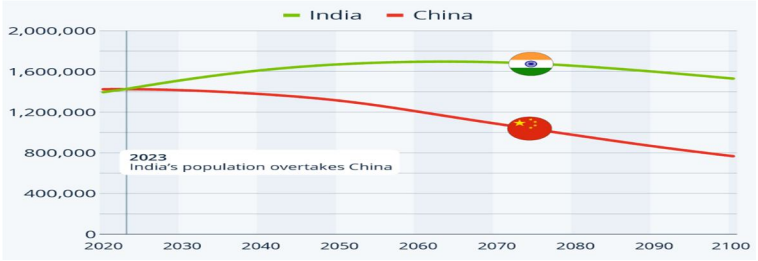

Fig 1- Estimated population of India
(Source- United Nation Population Division data)

2) Carbon Emission

India is one of the world's biggest CO_2 emitters, behind only China and the United States. This growth has seen India become the world's third- largest emitter of greenhouse gases (GHGs), after China and the U.S.; in 2021, it emitted 3.9 billion metric tons of carbon dioxide equivalent ($GtCO_2e$), accounting for roughly seven percent of the global total.

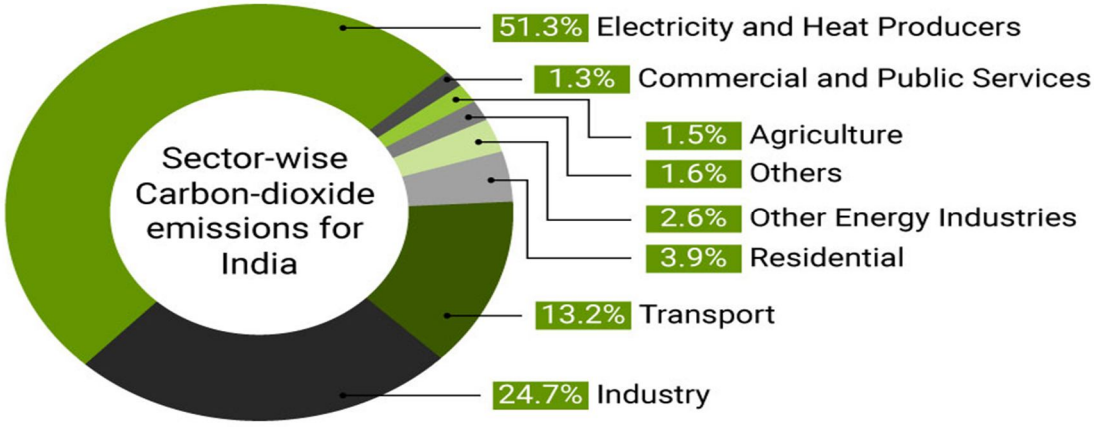

Figure 2: Sector-wise CO2 emission share in India
(Source: CO2 Emissions from Fuel Combustion, IEA 2021)

3) Deforestation

To accommodate our increasing population, vast areas that once had tree cover have experienced deforestation. Study with respect to Himalayas estimated that if deforestation in the Himalayas continue at the current rate, the dense forest cover (>40% canopy cover) will be restricted to 10% of land area in the Indian Himalayas by 2100. This may lead to a significant loss of 366 endemic plants and 35 endemic vertebrates [7]

4) Financial And Technological Factors

Being a developing country with limited financial resources, India frequently needs to make significant expenditures in the infrastructure for renewable energy, sustainable agriculture, and pollution control measures. Finding the money required for such initiatives can be quite difficult. India also has difficulties purchasing and implementing these technologies, notably in areas like waste management, efficient transportation, and sustainable energy. For this obstacle to be removed, technology transfer and international cooperation are crucial.

5) Global Warming

Past observations indicate that the annual mean temperature of India has showed significant warming trend of 0.51°C per 100 years, during the period 1901–2007 with increased warming during 1971–2007 Projections for 2030 also indicate a warming trend for the Indian sub-continent. The ecological impacts anticipated with even 2°C of warming are quite intense in itself and the situation could be much worse at higher temperature rise [8].

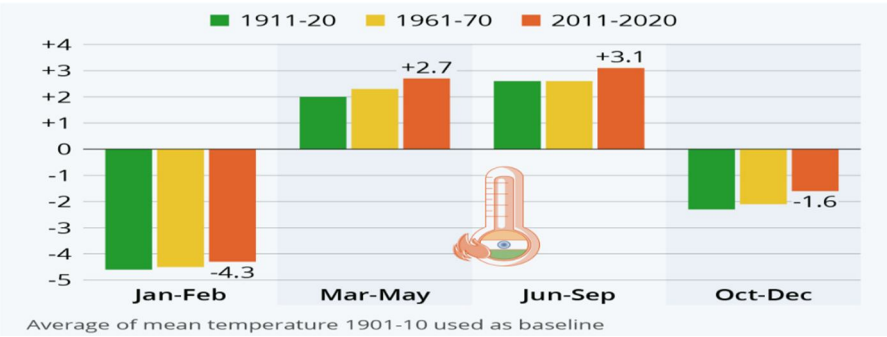

Fig- Indian Temperature rise trend
(Source- India Meteorological Department)

6) Waste Management

Rapid urbanisation and solid waste management issues in the country have also led to fires in solid waste disposal sites across India. Waste management is one of the crucial challenges for developing countries like India.

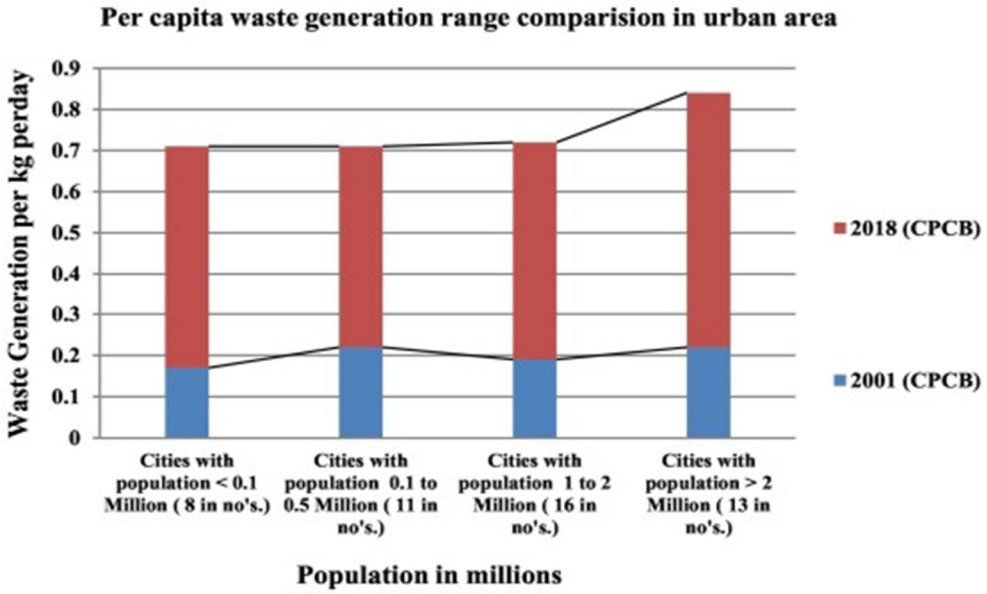

Fig. Per capita waste generation comparison in Indian cities
(Source- CPCB India, 2018)

B. Initiatives & its Implications

The government has envisaged several projects and initiatives spread across various sectors and ministries in The Union Budget 2023-24. Here are few important initiatives related to green growth mission.

1) *National Green Hydrogen Mission*- The objectives of this mission are developing green hydrogen production capacity of at least 5 MMT (Million Metric Tonne) per annum, alongside adding renewable energy capacity of about 125 GW (gigawatt) in India by 2030.It aims to entail over Rs 8 lakh crore of total investments and is expected to generate six lakh jobs. It will also lead to a cumulative reduction in fossil fuel imports by over Rs 1 lakh crore and an abatement of nearly 50 MT of annual greenhouse gas emissions.
2) *Green Credit programme*- The 'Green Credit' means a singular unit of an incentive provided for a specified activity, delivering a positive impact on the environment. The Green Credit Programme as a mechanism that complements the domestic Carbon Market. While the domestic carbon market focuses solely on CO2 Emission reductions, the Green Credit System aims to meet other environmental obligations as well, incentivizing sustainable actions by companies, individuals, and local bodies. The green credits will be tradable and those earning it will be able to put these credits up for sale on a proposed domestic market platform.
3) *PM-PRANAM*- The objective is to encourage the balanced use of fertilisers in conjunction with biofertilizers and organic fertilisers. Aiming to bring down the subsidy burden on chemical fertilisers, which is estimated to reach Rs 2.25 lakh crore in 2022-23 — 39% higher than 2021 figure of Rs 1.62 lakh crore.
4) *National Electric Mobility Mission Plan*- Under its National Electric Mobility Mission Plan (NEMMP), the government is targeting to achieve 6-7 million sales of electric and hybrid vehicles in India by 2020. NEMMP aims to achieve national fuel security by promoting hybrid and electric vehicles in the country. The objectives are achieving national energy security, mitigation of the adverse impact of vehicles on the environment and growth of domestic manufacturing capabilities in the automobile sector.
5) *Amrit Darohar Mission*- Amrit Darohar Mission was launched on 24th April 2022 with a view to conserve water for the future. The Mission is aimed at developing and rejuvenating 75 water bodies in each district of the country as a part of celebration of Azadi ka Amrit Mahotsav. In total, it would lead to the creation of 50,000 water bodies of a size of about an Acre or more. The Mission encourages mobilisation of citizen and non-govt resources for supplementing these efforts.

C. Successful Case Studies Contributing towards India's Green Growth Mission

1) *Tulasi Gowda-* Tulasi Gowda, a tribal woman from Karnataka, received the Padma Shri award in 2020 for her contribution to environmental protection. She has planted more than 30,000 saplings and looks after the nurseries of the Forest Department. She belongs to the Halakki tribe. She never had any technical training, but today she is called the "Encyclopedia of the Jungle". This is due to his extensive knowledge of various plants and herbs. When she was 12 years old, she planted and cared for thousands of trees. She also joined the forest department as a volunteer, which she admired for its commitment to protecting nature. Even at the age of 72, she continues to improve herself and share her wisdom with young people to explain the importance of protecting the environment.
2) *Indore city-* Indore has been ranked India's cleanest city for the sixth straight time. The city has been able to achieve this feat due to the processing of 1,900 tons of urban waste every day, which earns it crores of rupees and fuels its buses. Indore has been ranked India's cleanest city for the fifth time in a row in 20213. New waste management methods have been implemented in Indore, India, including converting waste into biogas, promoting sanitation, and creating organic fertilizer from waste. These efforts help the city effectively manage waste, reduce pollution, create renewable energy and promote sustainable agriculture [9].
3) *Hiware Baazar, Maharashtra-* Hiware Bazaar, a village in Maharashtra, India, has experienced a remarkable transformation through community leaders. Faced with water scarcity and poverty, the village implemented water development projects, improved farming techniques and promoted education, providing adequate water, encouraging crop cultivation, increasing income, increasing literacy and strengthening relationships. Hiware Bazaar's story demonstrates the potential for rural development and poverty reduction if communities engage in sustainable water management and community entrepreneurship [10].
4) *Odunthurai Panchayat, Tamil Nadu-* Odanthurai village council in southern Tamil Nadu explains how Panchayati Raj organizations can achieve rural development with the help of leadership and community participation. Odanthurai panchayat, which was underdeveloped before 1996, changed a lot after panchayat president R. Shanmugam worked to get basic amenities (water, electricity and shelter). Over the last decade, extreme poverty has been improved through a series of development programmes. The house was built for the people and within ten years the village was declared homeless with regular water, night lighting and good roads. Odanthurai is now an exemplary panchayat, making it clear that clean government can lead to development and other villages can follow this model [11].
5) *Payvihir Amarawati, Maharashtra-* Payvihir Located in the hills of Melghat district of Amravati district of Maharashtra, Payvihir has set a goal for the country by constantly showcasing how communities and NGOs are working together to protect the environment and provide health to the people. Payvihir was awarded the Biodiversity Award from the United Nations Development Program (UNDP) in 2014 for transforming 182 hectares of barren land within the scope of Community Forest Rights (CFR) into forest. In 2015, the village received the Maharashtra Wildlife Service Award from Asia Sanctuary for its contribution to environmental conservation in the state. Recently, the village also came up with the idea of selling organic sitaful (custard apple) under the brand name 'Naturals Melghat' in Mumbai.

V. FINDINGS AND ANALYSIS

Following are the insights from the telephonic interviews taken from students, working professionals, small scale shop owners, homemakers, field reporters and farmers to study their significant contributions towards green growth in order to shine light on the belief that "Every small contribution matter".

A. Minal Pathak

Profile: 21-year female working as a field reporter in "MP NEWS".

Meenal often travels to different locations for covering various events and societal issues with her team, she noticed that each time they visit outdoor shoot location, her team uses small plastic bottled water and at the end of each shoot there were around 150-200 empty bottles left as the waste.

She pledged to tackle this problem and started bringing 10 litre of water cans/ containers that can be reused to her outdoor shoots, she also motivated her team to use steel glasses instead of single use plastic disposals.

Impact- Her small step reduced the plastic waste her team was generating by 45 kg annually.

B. Indira Shrivastava

Profile 48-year housewife living in small village of Madhya Pradesh's Alirajpur district

Initiative – She took the pledge to deal with the issue of clothes piling up at her wardrobe due to fast fashion trends adopted by her children. She started making blankets out of those clothing pieces and often placed it on "Neki ki diwaar". She along with other women of her society started cleaning the common lanes that is in front of their houses and started burning single use plastic wrappers and other items every morning. They also developed a organised system to deal with leftover foods and vegetable peels. They started to collect collectively the leftover food from each house at every night and started to send it to a nearby "Cow shed".

Impact – These practices are being adopted by majority of households in the town and subsequently the town learned to keep itself clean and to manage waste in the absence of any other waste management programme executed by the authorities.

C. Ashutosh Rathore

Profile- A 25-year professional

Initiative-Being a food lover, Ashutosh likes to eat a lot from streets, and he was saddened by the amount of waste generated by street food vendors in the form of single use plastic spoons and plates every day, henceforth he decided to bring a dabba with himself everywhere he goes to reduce his share of plastic waste generated.

D. Hemant Pandey

Profile – 53-year shop owner

Initiative - Being a seller selling heavily in cold drinks and ice creams, he was saddened by the customers, who throw empty plastic bottles and food wrappers on the streets creating a pile of plastic waste floating on the streets every night when the market stops functioning. He started putting individual dustbins to each sitting bench in contradiction of the one bin the shop was having earlier, he started putting motivational lines to encourage its customers to through plastic bottles in the bin. At the end of each day, he collects the plastic bottles from proximity areas of the road and started burning it.

Impact- Shift in consumer attitude, consumer begin to look for dustbin even before unwrapping a food items. The initiative helped in preventing around 250- 300 plastic bottles being thrown on streets every day.

E. Shubhangi Mandloi

Profile: 26-year farmer living in Indore division of Madhya Pradesh.

Initiative: Started making manure from organic household waste and cow dung to significantly reduce the use of chemical fertilisers to maintain the fertility of soil.

Impact: She has reduced the use of chemical fertiliser by 5 kg a year and is now being able to reap multiple healthy crops on the sae soil maintaining its fertility and nutritional value.

F. Kamlesh Rawat

Profile: Small business owner selling home grown food items to small retailers.

Initiative: Being a part of lower middle class social strata. Kamlesh could not afford to replace its vehicle as per the pollution emission guidelines and he often buys and uses second hand vehicles to transport his products to retailers hence he was finding it difficult to adhere to pollution control laws, hence he took the initiative of turning his business vehicle to CNG vehicles.

Impact: Kamlesh is able to find a balance between his responsibility as a citizen and his profitable business activities.

G. Sudhakar Suple

Profile: 55 years old famer resident of Nagpur district with 10 Acre farmland.

Initiatives: He generally used 30 liters of chemical fertilizer every year to boost crop yield but that ultimately causes loss of soil potential also it creates solid waste through empty cans of chemicals. So, he shifted towards the bio fertilizers and reused the empty chemical can which were already in stock.

VI. CONCLUSION

India's green growth is a key initiative of Amrit Kaal. Amrit Kaal marks an important phase in India's journey towards sustainable development, with a focus on green growth.

The Indian government is working to create a prosperous, environmentally conscious, and equally future-conscious society through strategies such as investment in renewable energy sources, sustainable agriculture, and eco-friendly technologies. This approach promises to reduce pollution, improve public health, and spur economic growth, making green growth a key part of India's vision for the future and power. The Indian government has implemented various strategies to promote green growth, which is expected to have a positive impact on the environment and economy. The success of India's Green growth mission is heavily depended on its successful implementation at grass root level which can only be ensured if all cities pledge to contribute towards this national mission under their individual capacity.

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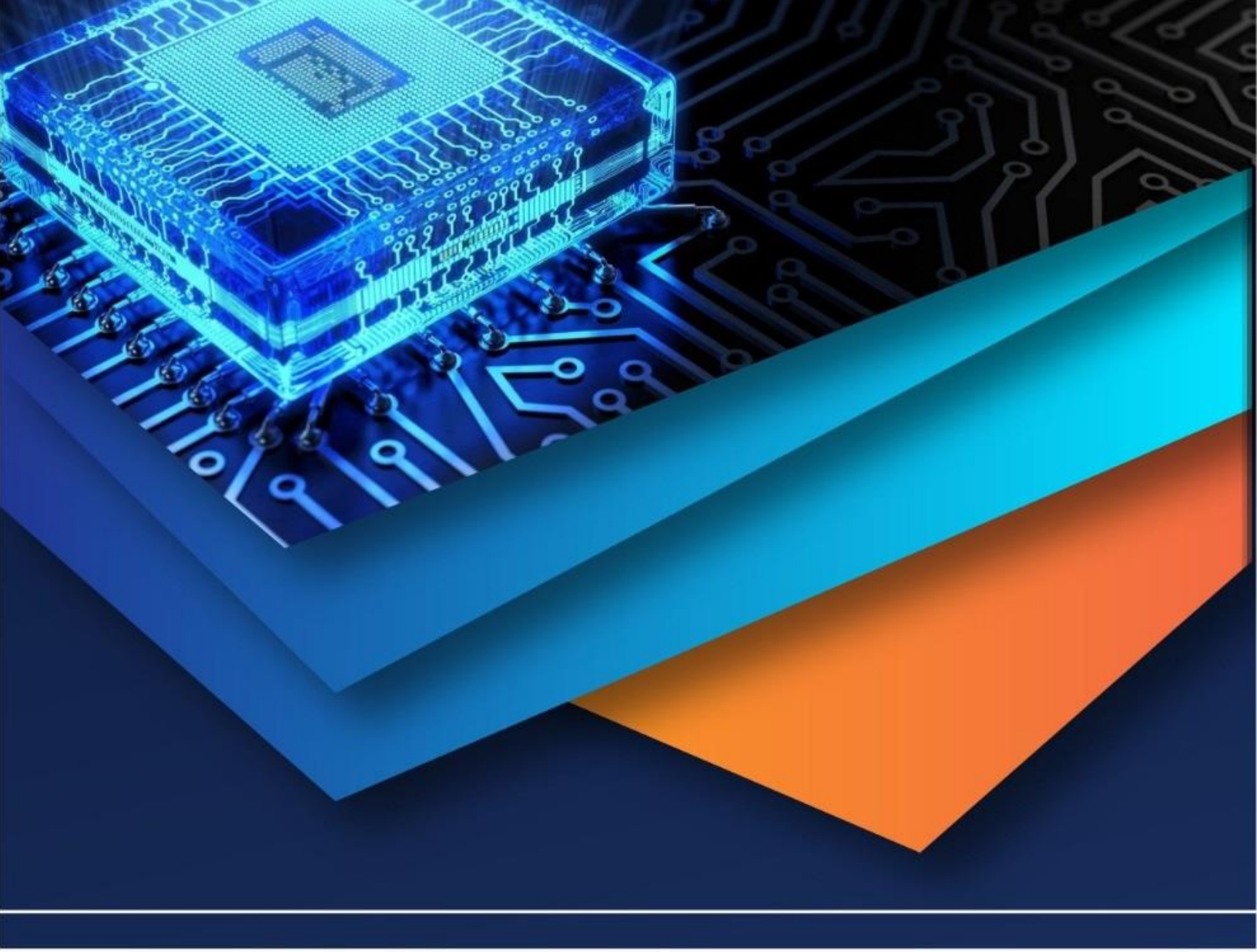

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