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A Study on Budget Allocation w.r.t. Agriculture Sector

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***Abstract:** This study examines the budget allocation system with reference to Agriculture sector from 2010-19 in India. Agriculture is the only means of living for almost two-thirds of the employed class in India. The agriculture sector of India has occupied almost 43percent of India's geographical area. The study intended to determine the factors that influence the budget allocation system and to analyze the difference between budget allocated and outcome and also to know the proportion on budget allocated to the agriculture sector when compared to other sectors by using statistical tools like line chart, pie chart and correlation co-efficient and. Data was collected from secondary sources such as websites, news papers, articles and reports of Union Budget. This study was analyzed from different sample crops in agriculture sector such as Maize, Cotton, Groundnut, Sugarcane, Rice.*
***Keywords:** Budget Allocation System, Union Budget, Agriculture sector, Maize, Cotton, Groundnut, Sugarcane and Rice.*

I. INTRODUCTION

A budget is outlined as patterns of expenditure and revenue over the lifetime of the project. In general, it's a prediction of the attainable prices which will be incurred by concluding the activities planned during a project. The dictionary meaning of budget is a systematic plan for the expenditure of a usually fixed resources during a given period.

The union budget of India, referred to as the Annual financial statement is the annual budget of the Republic of India, presented by Finance Minister of India in parliament.

The union budget is preceded by an Economic survey which outlines the broad direction of the budget and the economic performance of the country. The Budget was first introduced in India on 7th April 1860 from East-India Company to British Crown. The first Indian Budget was presented by James Wilson on February 18, 1869.

The Budget speech of the minister usually has two components-Half A deals with general economic survey of the country whereas Half B relates to taxation proposals.

A. Budget Allocation For Agriculture Sector

The budget allocation to agriculture and its allied field is extremely crucial for the country as agriculture sector engages nearly 50 percent of the country's work force and accounts for concerning 18 percent of India's gross domestic product (GDP).

Agriculture is a state subject and the role of State Government in the development of agriculture sector is very important. The Union Government also supports agricultural investments to some extent. Each State Government maintains its own budget, prepared by the state's Minister of Finance in consultation with appropriate officials of the Central Government. Primary control over state finances rests with the state legislature in the same manner as at the Central Government level.

Both the finance minister and later the prime minister spoke about the highest priority given to the welfare of farmers in the budget related speeches in the parliament after the budget was presented on 1st Feb of every year.

The monetary fund estimates for the Agriculture Ministry for 2019-20 is 140 percent more than that for 2018-19 at Rs 57,600 crore.

B. Objectives of The Study

1) To know the proportion on budget allocated to the agriculture sector when compared to other sectors of union budget.
2) To study the budget allocation towards agriculture sector.
3) To examine the agriculture output for selected crops from 2010-2019.
4) To study and check whether the budget allocated to the agriculture sector is beneficial to the farmers.

C. Research Methodology

Research methodologically is that the systematic, theoretical analysis of the ways applied to a field of study. It contains the theoretical analysis of the body of ways and principles related to a branch of information. Typically, it encompasses ideas like paradigm, theoretical model, phases and quantitative or qualitative techniques.

1) *Sources of Information:* The present study is predicated on secondary sources adopted from completely different sources like websites, newspapers, articles, and magazines.
2) *Sample size:* Ten years ranging from the year 2010-19.

a) Statistical tools

b) Graphs

i) Column chart
ii) Line chart
iii) Pie chart

Used Correlation Co-efficient to estimate the relationship between agriculture growth output and budget allocation.
Maize, Cotton, Groundnut, Sugarcane, Rice are taken for sampling.

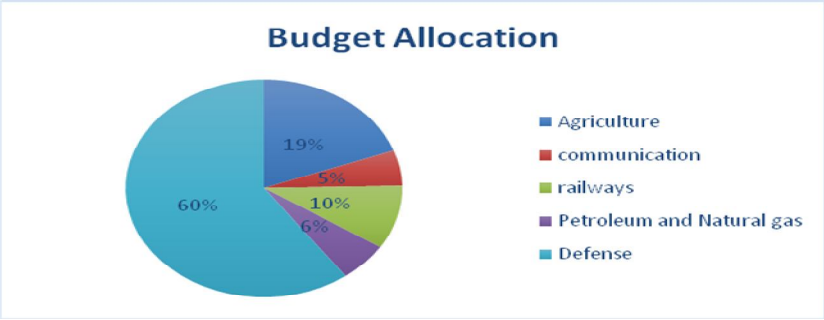
II. DATA ANALYSIS

1) To know the proportion on budget allocated to the agriculture sector when compared to other sectors of union budget.

Table no: 1 Budget Allocation to all sectors in 2019-20 Union Budget (Rupees: crores)

Sectors	Agriculture	communication	Railways	Petroleum and Natural gas	Defense
Budget Allocation	138564	38637	68019	42091	431011
Percentage	19.1	5.4	9.5	6	60

Fig no: 1 Pictorial representation of Budget Allocation in all sectors



Interpretation

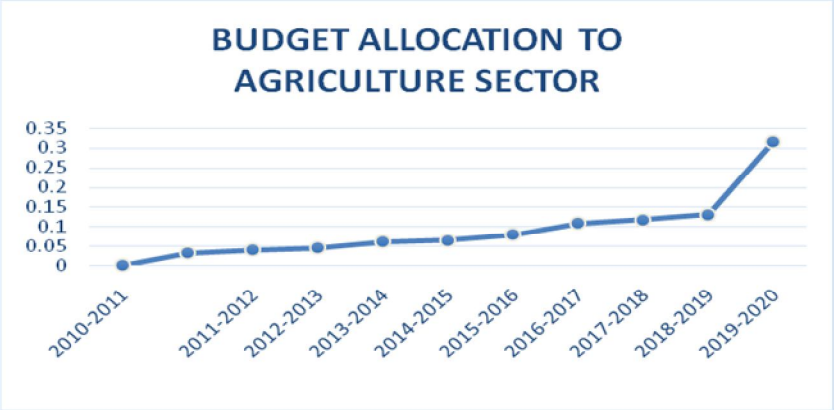
a) From the above figure the allocation of budget is highest in Defence sector i.e. 431011crores with 60% and lowest in communication sector i.e. 38637crores with 5.4% when compared to all the other sectors.
b) Agriculture sector remains the second place in the budget allocation i.e.138564 crores with 19.1%.
c) Budget allocated to railway sector is about 68019 crores with 9.5% and in petroleum and natural gas it is 42091 crores with 6%

2) To study the budget allocation towards agriculture sector.

Table no:2 Budget allocated to Agriculture sector (Rupees: crores)

S. No	Years	Budget Allocation	Percentage
1	2010-2011	14,000	3.19%
2	2011-2012	17,123	3.91
3	2012-2013	20,208	4.62
4	2013-2014	27,047	6.18
5	2014-2015	28,500	6.51
6	2015-2016	35,000	8
7	2016-2017	47,912	10.95
8	2017-2018	51,576	11.78
9	2018-2019	57,600	13.16
10	2019-2020	1,38,564	31.7
Total		4,37,530	100

Fig no: 2 Graphical representation of Budget allocated to Agriculture sector



Interpretation

From the graph and pie chart we can examine that there is an increase in every year and also some fluctuation in the year 2015-16.

a) In 2010-11 the budget allocation to the agriculture sector was 14,000 crores with 3.19% and in 2019-20 it has increased to 138564 crores with 31.7%.

b) In the year 2013-14 the sector has increased to 27,047 with 6.18% whereas in the year 2015-16 the budget allocation was 8%.

c) In the year 2017-18 the budget allocated to agriculture sector was 11.78% and in 2018-19 there is an increase up to 13.7%.

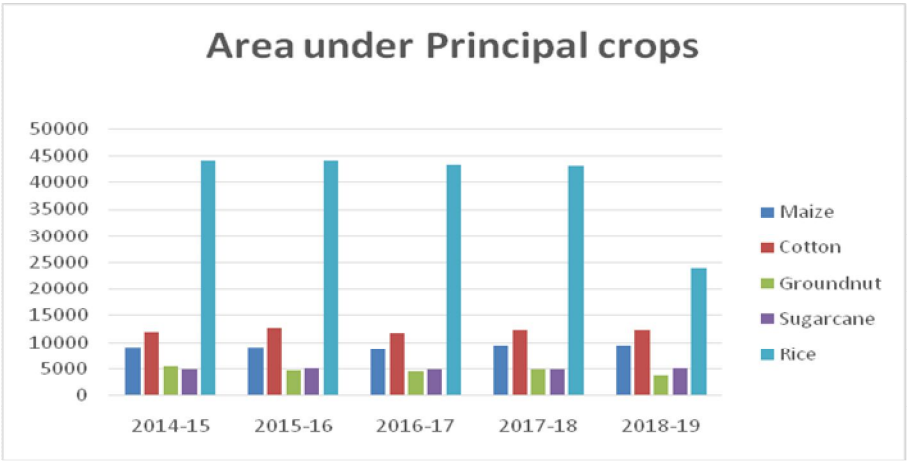
3) To examine the agriculture output for selected crops from 2010-2019.

Area under Principal crops

Table no: 3 The area covered by some selected crops (Area:'000 Hectares)

Crops	2014-15	%	2015-16	%	2016-17	%	2017-18	%	2018-19	%
Maize	9066.26	11.90	9185	12.09	8691	11.80	9,500	13	9,500	17
Cotton	11960	15.80	12819	16.80	11872	16.16	12,300	16	12,350	22
Groundnut	5505.21	7.27	4769	6.27	4555	6.20	4898.7	7	3890	7
Sugarcane	4993.3	6.50	5067	6.67	4953	6.74	4900	6	5200	10
Rice	44135	58.33	44111	58.07	43388	59.06	43200	58	24020	44
Total	75659.7	100	75951	100	73459	100	74798.7	100	54960	100

Fig no:3 Graphical representation of Area covered by some selected crops



Interpretation

From the above graph we can estimate the area in which these crops grow based on hectares.

The area covered by the Rice crop is highest in the year 2014-15 and also lowest in the year 2018-19.

a) The area covered by the Sugarcane crop is highest in the year 2018-19 and lowest in the year 2017-18.

b) The area covered by the Cotton crop is highest in the year 2015-16 and lowest in the year 2013-14.

c) In 2016-17, the percentage of area covered by Rice crop is high i.e. 59.06% when compared to all other crops.

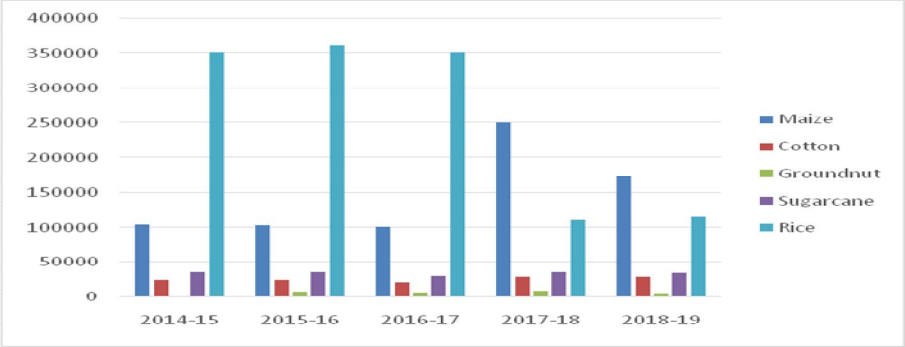
d) In 2017-18, the percentage of area covered by Sugarcane crop is low i.e. 6% from all other crops.

4) Production under Principal crops

Table no: 4 The production under some selected crops (Production:'000tonnes)

Crops	2014-15	%	2015-16	%	2016-17	%	2017-18	%	2018-19	%
Maize	104225	14.26	103040	19.43	101817	19.91	250000	58	173000	48
Cotton	23872.6	3.26	23778	4.48	21423	4.10	29,000	6	28,500	8
Groundnut	970.172	0.13	7392	1.39	6761	1.32	8942.5	2	5919.5	2
Sugarcane	35809	4.89	34715	6.54	30047	5.87	35,323	8	33,830	9
Rice	351114.8	48.04	361307	68.14	351152	68.69	111010	26	115600	33
Total	515991.6	100	530232	100	511200	100	434276	100	3,56,849	100

Fig no:4 Graphical representation of the production of some selected crops



Interpretation

From the above graph we can estimate the production of crops based on tonnes.

a) The production of the Rice crop is highest in the year 2015-16 and lowest in the year 2017-18.

b) The production of the Sugarcane crop is highest in the year 2018-19 and lowest in the year 2016-17.

c) The production of the Groundnut crop is highest in the year 2017-18and lowest in the year 2014-15.

d) The production of the Cotton crop is highest in the year 2017-18 and lowest in the year 2016-17.

e) The production of the Maize crop is highest in the year 2017-18 and lowest in the year 2015-16.

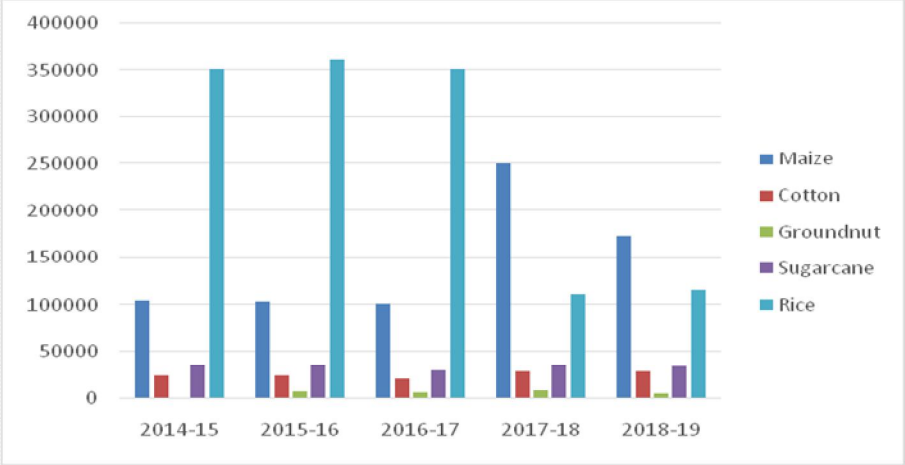
f) In every year the percentage of production over the Rice crop is high and there is low in Groundnut crop from the selected crops.

5) Average Yield of Principal crops

Table no: 5 The average yield of some selected crops (Yield: kg/hectare)

Crops	2014-15	%	2015-16	%	2016-17	%	2017-18	%	2018-19	%
Maize	2314.4	4	2407	3.4	2375	3	2630	6	2500	5
Cotton	462	0.8	415	0.6	511	1	476	1	502	1
Groundnut	1398.8	2.3	1465	2.1	1567	2	1825	4	1595	4
Sugarcane	549.5	1	530	1	459	1	789	2	798.1	2
Rice	55,742.3	92	65,350	93	63,776	93	38,681	87	37,845	88
Total	60,467	100	70,167	100	68,688	100	44,401	100	43,231.1	100

Fig no: 5 Graphical representation of average yield of some selected crops



Interpretation

From the above graph we can estimate the average yields of crops based on kgs/hectares.

a) The net yield of Rice crop is highest in the year 2015-16 and lowest in the year 2018-19.

b) The net yield of Sugarcane crop is highest in the year 2018-19 and lowest in the year 2016-17.

c) The net yield of Groundnut crop is highest in the year 2017-18 and lowest in the year 2014-15.

d) The net yield of the Cotton crop is highest in the year 2016-17 and lowest in the year 2015-16.

e) The net yield of Maize crop is highest in the year 2017-18and lowest in the year 2014-15.

f) Comparatively in every year the percentage of average yield of Rice crop is high and Sugarcane crop is low among all the selected crops.

6) To study and check whether the budget allocated to the agriculture sector is beneficial to the farmers.

Table no: 6 Correlation between Budget allocation and Production covered by Rice crop

Years	2012-13	2013-14	2014-15	2015-16	2016-17
Budget Allocation(X)	20,208	27,047	28,500	25,000	47,912
Rice crop(Y)	105193	105113	104225	103040	101817

a) Correlation Co-efficient of X and Y

$$r = \frac{N\sum xy-(\sum x)(\sum y)}{\sqrt{[N\sum x^2-(\sum x)^2][N\sum y^2-(\sum y)^2]}} = -0.81107$$

b) Interpretation: From the above table correlate the relationship between Budget allocation and Production covered by Rice crop. Interpret Budget Allocation as (X) and Rice crop as (Y). Hence there is negative correlation i.e. (-0.81107) exists between X and Y.

Table no: 7 Correlation between Budget allocation and Production covered by Maize crop

Years	2012-13	2013-14	2014-15	2015-16	2016-17
Budget Allocation(X)	20,208	27,047	28,500	25,000	47,912
Maize crop(Y)	21753	22258	23872.6	23778	21423

a) Correlation Co-efficient of X and Y

$$r = \frac{N\sum xy-(\sum x)(\sum y)}{\sqrt{[N\sum x^2-(\sum x)^2][N\sum y^2-(\sum y)^2]}} = -0.40222$$

b) Interpretation: From the above table correlate the relationship between Budget allocation and Production covered by Maize crop. Interpret Budget Allocation as (X) and Rice crop as (Y). Hence there is negative correlation i.e. (-0.4022) exists between X and Y.

Table no: 8 Correlation between Budget allocation and Production covered by Groundnut crop

Years	2012-13	2013-14	2014-15	2015-16	2016-17
Budget Allocation(X)	20,208	27,047	28,500	25,000	47,912
Groundnut crop(Y)	6965	4693	970.172	7392	6761

a) Correlation Co-efficient of X and Y

$$r = \frac{N\sum xy-(\sum x)(\sum y)}{\sqrt{[N\sum x^2-(\sum x)^2][N\sum y^2-(\sum y)^2]}} = 0.068556$$

b) Interpretation: From the above table correlate the relationship between Budget allocation and Production covered by Groundnut crop. Interpret Budget Allocation as (X) and Groundnut crop as (Y). Hence there is positive correlation i.e. (0.068556) exists between X and Y.

Table no: 9 Correlation between Budget allocation and Production covered by Cotton crop

Years	2012-13	2013-14	2014-15	2015-16	2016-17
Budget Allocation(X)	20,208	27,047	28,500	25,000	47,912
Cotton crop(Y)	34360	34110	35809	34715	30047

a) Correlation Coefficient of X and Y

$$r = \frac{N\sum xy-(\sum x)(\sum y)}{\sqrt{[N\sum x^2-(\sum x)^2][N\sum y^2-(\sum y)^2}} = -0.86754$$

b) Interpretation: From the above table correlate the relationship between Budget allocation and Production covered by Cotton crop. Interpret Budget Allocation as (X) and Cotton crop as (Y). Hence there is negative correlation i.e. (-0.86754) exists between X and Y.

Table no: 10 Correlation between Budget allocation and Production covered by Sugarcane crop

Years	2012-13	2013-14	2014-15	2015-16	2016-17
Budget Allocation(X)	20,208	27,047	28,500	25,000	47,912
Sugarcane crop(Y)	360694	340842	351114.8	361307	351152

a) Correlation Co-efficient of X and Y

$$r = \frac{N\sum xy-(\sum x)(\sum y)}{\sqrt{[N\sum x^2-(\sum x)^2][N\sum y^2-(\sum y)^2]}} = -0.301085$$

b) Interpretation: From the above table correlate the relationship between Budget allocation and Production covered by Sugarcane crop. Interpret Budget Allocation as (X) and Sugarcane crop as (Y). Hence there is negative correlation i.e. (-0.301085) exists between X and Y.

III. FINDINGS

A. Indian agriculture sector accounts for 18% of India's GDP and provides employment to 50% of the countries workforce.

B. Over the past few decades, the producing and services sectors have progressively contributed to the expansion of the economy, whereas the agriculture sector's contribution has diminished from quite five hundredth of gross domestic product within the 50 to 15.4% in 2015-2016.

C. The negative relationship of correlation exists between the expansion outputs of alternative crops i.e. Rice, Maize, Sugarcane and Cotton) and Budget allotted to Agriculture sector.

D. The production of Sugarcane crop is highest among all the opposite crops and therefore the reason behind the rise in production was the nice monsoon season and support from the government. The increase in average yield of Sugarcane crop is because of accessibility of latest technology, improvement in irrigation facility, new ways of production.

E. Crops as well as fruits and vegetables account for 59.0 % of gross domestic product in agriculture, biological science and fishing sector. Around 41.0 % of GVA of this sector supported stock merchandise, biological science and fisheries.

IV. SUGGESTIONS

A. Government needs to alter policies regarding the functioning of APMC (Agricultural Produce Marketing Committee) and allocate more budget to make it more transparent by digitizing the physical trade happening at the market yard.

B. The effectiveness of the scheme should be analysed after its implementation over the agriculture sector. The schemes include Pradhan Mantri Krishi Sinchai Yojana Market Intervention Scheme.

C. Special priority should be accorded to agriculture research and education to further enhance the yield of major crops and to attain sustainable development in some states.

D. The Central government role is limited in agriculture, the Centre and the State governments need to come together in this council to address the issues and to alleviate rural poverty and farm distress.

V. CONCLUSION

Most of the Indians are directly or indirectly counting on the agriculture. Some are directly connected with the farming and a few people are concerned in doing business with these merchandises. India has the capability to provide the food grains which might build large distinction in Indian Economy. To attain targeted mark by the government it has to give support just in case of land, bank loans and alternative machineries to the little farmers alongside the large farmers with this we will expect some improvement in Indian economy. There was a desire to extend budget allocation to high-value agriculture (horticulture, husbandry, dairy, fisheries) as growth of those sectors is far higher. There was also a need to increase allocation of more funds to increase rural infrastructure, agricultural markets, cold storages, warehouses with modern technology so that the rural sector in general and agriculture in particular will increase efficiency and productivity.

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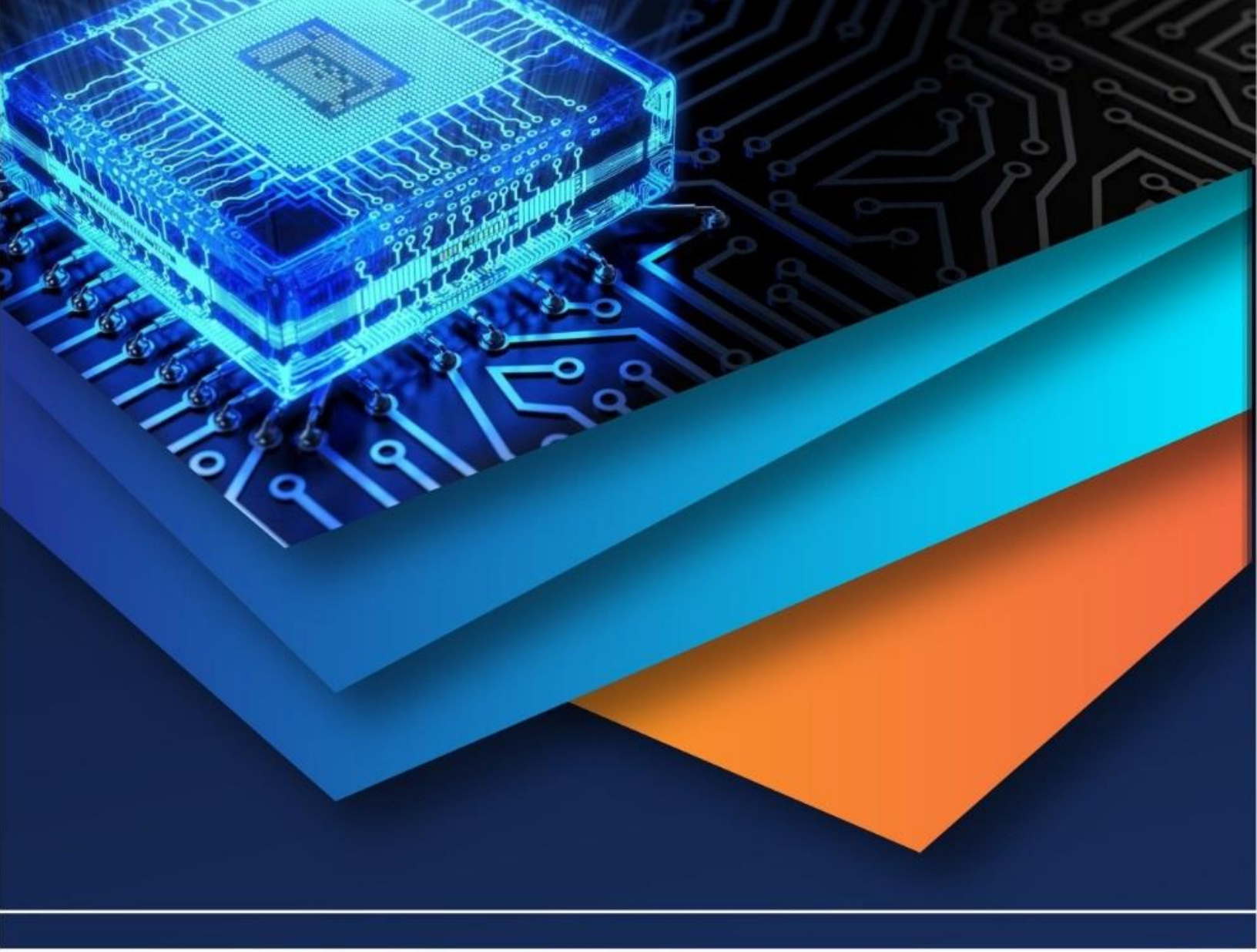

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