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Some Medicinal Herbs and Shrubs of District Solan (HP)

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Abstract: ***The herbal medicines are in practice since time immortal. Medicinal plants are used for preventive, promotive and curative purposes.***
Eighty percent of the ingredients of drug formulation in Ayurveda are plant based. Himachal Pradesh which is a rich repository of medicinal wealth and occupy an important place in the Vedic treatise. India has probably the oldest, richest and most diverse cultural traditions within the use of medicinal plants. Indians 3500 BC, Chinese 3000 BC and Egyptians 2500 BC knew the properties of medicinal plants.
Medicinal plants have served the human kind, for hundreds of years and still these plants are used traditionally to cure various diseases.
Keywords: Medicinal plants, Herbal medicines, shrubs, Solan

I. INTRODUCTION

In the struggle for existence, men had learned about their ultimate fellows- the plants. Plants and animals share harmonious biological relationships since past and have evolved along parallel line, cooperating and depending upon one another for existence. During struggle for existence men must have encountered pains and sickness.

These sufferings lead men to experimentation through trial and error method and discovery of healing properties of plants. On realizing the importance of those "Wonder Herbs" he began communicating about them and passed this knowledge to its successors (Sinha & Sinha, 2001).

People moved to synthetic drugs instead of using natural medicines. Synthetic drugs though showed quick cure but gave some side effects in long term. Although most of synthetic drugs are derived from plants e.g. Morphine from *Papavar somniferum*, Digitoxin from *Digitalis purpurea* etc.

And many more have been used by the people since ages, but these are not as beneficial as herbal medicine. Realizing the long lasting effects of herbal medicines in past few years. People have again started preferring towards herbal product. So it's the great time for all the botanist to catch the chance to supply and make aware the whole world with various plants and their products of herbal value.

India is a biodiversity rich country with about 45,000 plants species in its repositories. According to Anthropological survey of India (1994), medicinal plants are widely employed by all sections of the population and it's been estimated that, in total over 7500 species of plants are employed by several ethnic communities.

About 54% of the country's land is under cultivation for food, ornamental and medicinal plant crops. Presently, medicinal plants play an important role in India's economy.

NTFPs (Non-timber forest products) account for 70% of India's forest product exports and therefore the demand for their phytochemical constituents is predicted to increase in future.

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Table1. Medicinal plants: Species diversity and representative species of different biogeographic zones of India

Biogeographic region	Estimated no. of medicinal plants	Examples of some typical medicinal species
Trans Himalayas	700	Ephedra geradiana, Hippophae rhamnoides, Arnebia euchroma
Himalayan	2500	Aconitum heterophyllum , Nardostachys grandiflora, Taxus wallichiana , Rhododendron anthopogon and Panax pseudoginseng.
Desert	500	Convolvulus microphyllus, Tecomella
		undulata, Citrulus colocynthis .
Semi-Arid	1000	Commiphora wightii , Caesalpinia bonduc, Balanites aegyptiaca , and Tribulus rajasthanensis .
Western Ghats	2000	Myristica malabarica, Garcinia indica , Utleria salicifolia and Vateria indica.
Deccan Peninsula	3000	Pterocarpus santalinus, Decalepis hamiltonii , Terminalia pallida and Shorea tumbuggaia.
Gangetic Plain	1000	Holarrhenaq pubescens , Mallotus philippensis , Pluchea lanceolata and Peganum harmala .
North-East India	2000	Aquilaria malaccensis, Smilax glabra, Ambroma augusts and Hydnocarpus hurzii.
Islands	1000	Claophyllum inophyllum, Adnanthera pavonina , Barringtonia asiatica , and Aisandra butyracea.
Coasts	500	Rhizophora mucronata , Acanthus ilicifolius , Avicennia marina and Sonneratia caseolaris .

Solan District of Himachal Pradesh is located at 30.90°N, 77.09°E lie the South-Western ranges of the Himalayas, average elevation of 1502 m; have an immense number of medicinal plants and other useful plants. Most of these plant find there use in traditional medicine, folk uses and also in modern industry. Solan has a rich repository of medicinal plants. Some of the important plants recorded were *Aloe barbadensis, Centella asiatica, Dioscorea deltoidea, Tinospora cordifolia, Viola serpens, Asparagus officinalis, Berberis aristata, Zingiber offinale, Datura stramonium* etc., (Verma *et al.*, 2012. The present study was carried out by keeping following objectives in mind to collect and identify various medicinal plants species of the area, to provide brief description about the plants and their uses and to prepare herbarium of the collected medicinal plants.

II. METHODOLOGY

A. *Study area*

Present study was conducted to document or explore the medicinal herbs and shrubs in Solan town of Himachal Pradesh. Periodic field surveys were organized during the month of February to March, 2018 in different localities of Solan town i.e. Chambaghat, Khanog, Jaunaji, Mohan Park, Jawahar Park, Forest area of Solan etc. The information regarding the utility, part used and other uses of the various medicinal herbs and shrubs was collected through the field survey in different localities. In order to collect the primary data following approaches have been followed:

1) *Discussion Method:* Discussions were held with different people of the localities. All aspects of the medicinal herbs and shrubs that are used for medicinal purposes were discussed. Data was collected by questionnaire, interviews and discussion.
2) *Field Survey Method:* Extensive field surveys were conducted for the collection of data. The knowledgeable person was engaged with us to locate the sites where these plants were present. During the investigation, the villagers and the people of different communities of the area were interviewed (Table 2). The information was collected about particular season for collecting plants and plant parts used for medicinal purpose. Plant specimens were photographed and sample of some plants were collected from the field. Local names were obtained from the informant and the species were further identified by using secondary sources.The secondary data was collected from libraries or research organizations, journals, magazines and internet such as Wikipedia, eBooks, Flora similensis (1902), A handbook of Et Mud(1999), Ethno medicinal plants of Mandi district (Gaur and Singh,1995) etc.

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Table 2. Profile of informants of District Solan of Himachal Pradesh

Sr.No.	Name	Sex	Age	Profession	District
1.	Padma Devi	Female	68	Housewife	Solan
2.	Sumit Sharma	Male	35	Farmer	Solan
3.	Chanderkant	Male	48	Farmer	Solan
4.	Rajesh Sharma	Male	52	Employee	Solan
5.	Kalpna Devi	Female	30	Housewife	Solan
6.	Meera Sharma	Female	50	Employee	Solan
7.	Narain Singh	Male	45	Employee	Solan
8.	Lachiram	Male	75	Farmer	Solan
9.	Mastram	Male	79	Farmer	Solan
10.	Dharmender kumar	Male	47	Farmer	Solan

III. RESULTS

The present study provides details of 12 plants species of 10 families which have various medicinal uses which are used by the communities of studied area. The plant species of the present study are arranged alphabetically with their botanical name, local name, family and part used as shown in the table given below (Table 3).

Table3.

SR. NO.	BOTANICAL NAMES	COMMON NAMES	FAMILY	PART USED
1.	*Berberis aristata* DC.	Rasout	Berberidaceae	Dried stem, fruits, leaves, stem bark and root bark extract
2.	*Verbascum Thapsus L.*	Ban tambakhu	Scrophlaraceae	Leaves and flowers
3.	*Plantago ovata Forssk.*	Isabgol	Plantaginaceae	Whole plant
4.	*Roylea cinerea (D.Don) Baill.*	Patkarru	Lamiaceae	Leaves decoction
5.	*Cuscuta reflexa Roxb.*	Amarbel	Convolvulaceae	Whole plant
6.	*Dhatura stramonium L.*	Dhatura	Solanaceae	Leaves , flower ,root bark, seeds and fruit
7.	*Hypericum perforatum L.*	St. john's wort	Hypericaceae	Flowers and leaves
8.	*Malva parviflora L.*	Cheesewed	Malvaceae	Roots, leaves and Seeds
9.	*Mentha piperita L.*	Pudina	Lamiaceae	Leaves
10.	*Vinca major L.*	Devil's eye	Apocynaceae	Whole plant
11.	*Salvia officinalis L.*	Salvia	Lamiaceae	Flowers and leaves.,
12.	*Riccinus communis L.*	Eranda	Euphorbiaceae	Leaves, fruits and Seeds

List of medicinal herbs and shrubs

Description

A. Berberis Aristata

Family – Berberidaceae Common name – Rasout

It is an erect spiny shrub, ranging between 2 to 3 m in height. It is a woody plant, with bark that appears yellow to brown. The bark is covered with three-branched thorns. The leaves are leathery in texture and are toothed, with several too many small indentations along the margin of the leaf. **(Fig.1)**

Uses: Rasaut is used to cure stomach infection, piles, ulcers, fever, constipation, jaundice and eyes related problems. Its decoction is used for gargling to relieve, improve voice and throat infection.

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B. Verbascum Thapsus

Family– Scrophulariaceae Common name – Ban tambakhu

It is a hairy biennial plant that can grow to 2 m tall or more. Its small, yellow flowers are densely grouped on a tall stem, which grows from a large rosette of leaves. The leaves are large, up to 50 cm long. Leaves form a basal rosette, with large, velvety-like, long-oval, gray-green. **(Fig.2)**

Uses: It is useful to help resolve pectoral complaints and bleeding of the lungs and bowels. if mix it with tobacco and smoke it to relieve coughing spasms. It contains antiseptic agents and is mostly used today for chest ailments including Bronchitis, Asthma, pneumonia, pleurisy and Whooping cough.

C. Plantago Ovate

Family -Plantaginaceae Common name - Isabgol

This annual medicinal herb has erect stems and narrow leaves. The leaves are lance shaped, hairy and have indents on stem **(Fig. 3)**

Uses: The dried seed as well as the husk of the isabgol is used as an emollient, demulcent and a laxative. It is used to relieve chronic cases of constipation also relieves gastrointestinal tract problems, cough, cold, piles, rheumatism, and bronchial infection

D. Roylea Cinerea

Family- Lamiaceae Common name – Patkarru

It is a pleasantly aromatic shrub, upto 1.8 m tall. Stems including older woody parts, densely greyish velvety .Leaves are 2-4 cm ovate, toothed, flat or narrow at the base. Flowers are white or pink about 1-3 cm. **(Fig. 4)** Uses: It is traditionally used as for the cure of ailments such as fever, jaundice, skin disease, malaria and most prominently in diabetes.

E. Cuscuta Reflexa

Family Convolvulaceae Common name - Amarbel

The plant lives its entire life on host plant without any attachment to the soil. The stems and branches of cuscuta are fleshy, its flowers are small, bell shaped and white in colour with yellow filament. Fruits are small and contain 2-4 seeds. **(Fig. 5)** Uses: Whole plant of *Cuscuta i*s used for treatment of various diseases. It is used for treating constipation, liver, spleen diseases, diarrhoea, inflammation etc. It is alterative, purgative and carminative. The plant also has Anti-fertility effect.

F. Dhatura Stramonium

Family- Solanaceae Common name - Dhatura

It is a foul-smelling, erect, annual, freely branching herb that forms a bush up to 60 to 150 cm tall. The root is long, thick, fibrous, and white. The leaves are smooth, toothed and soft. The egg-shaped seed capsule is 3 to 8 cm in diameter and either covered with spines or bald**. (Fig. 6)** Uses: Dhatura is used for relieving asthma, cough, tuberculosis and bronchitis by smoking the dried leaves, roots or flowers. It is also used to cure rheumatic pain, swellings, wounds, gout, burns, ingrown toe-nails, fungal infections, tumors and ulcers. leaves are used in eczema.

G. Hypericum Perforatum

Family- Hypericaceae Common name - St. John's wort

St John's wort is an herbaceous perennial plant with extensive, creeping rhizomes. It generally reaches a height of 0.3 to 0.61 m. Its stems are erect, branched in the upper section, and can grow to 1 m high. The leaves are yellow-green in color. The flowers measure up to 2.5 cm and are bright yellow with conspicuous black dots**. (Fig.7)** Uses: It is used for the treatment of depression. It is also useful for the treatment of other emotional disorders such as anxiety, obsessive- compulsive disorder (OCD), menopausal mood swings, and premenstrual syndrome. Excess use may cause dry mouth, dizziness, constipation, and other Gastro Intestinal symptoms and confusion. Sensitivity to sunlight also may occur.

H. Malva Parviflora

Family- Malvaceae Common name - Cheese weed

It is an erect, annual plant. It can grow up to 5 - 80cm tall. It has a decumbent or erect habit, growing up to 50 cm in height. The broad leaves have 5 to 7 lobes and are 8 to 10 cm in diameter. It has small white or pink flowers with 4 to 6 mm long petals. **(Fig.8)**

Uses: It is used to remove dandruff and to soften the hair. It is used for treatment for wounds, boils, skin rashes, insect bites, pimples and swellings.

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I. Mentha Piperita

Family- Lamiaceae Common name - Pudina

Mints are aromatic, almost exclusively perennial, rarely annual herbs. It will grow 10–120 cm tall and can spread over an indeterminate area. They have wide-spreading, underground and over ground stolons and erect square, branched stems. Leaf colours range from dark green and grey- green to purple, blue, and sometimes pale yellow. The flowers are white to purple. **(Fig.9)**

Uses: It is used to relieve dysmenorrhoea and fever. It is applied over joints to relieve pain and local inflammation .It is given with honey to relieve cough and sore throat, used to treat indigestion and bloating of abdomen.

J. Vinca Major

Family– Apocyanaceae Common name – Periwinkle

It is a perennial evergreen shrub, 15-20 cm high. It is a creeper. The plant has shiny dark green leaves that grow up to 5 cm long with a leathery texture. There are numerous cultivars of periwinkle each with different flower colors (blue, white, pink, etc.) and variegated foliage. **(Fig.10)** Uses: This herb is used for a toothache and poisonous insect stings and animal bites. It was often recommended as a treatment for a sore throat, nosebleed, and various lung diseases It can also be used for digestive problems such as gastritis (inflammation or irritation of the stomach lining) and diarrhea by strengthening the mucous membranes resulting in reduced fluid or blood loss.

K. Salvia Officinalis

Family- Lamiaceae Common name - Salvia

It is a perennial, evergreen sub shrub. With woody stems, grayish leaves, and blue to purplish flower. Leaves are grey-green, on the upper side, and nearly white underneath due to the many short soft hairs. **(Fig.11)** Uses: Salvia officinalis has shown anti fungal, antiviral and anti-bacterial properties that make it a useful weapon in combating many illnesses. It was also commonly used in tea form to treat sore throats and it is also considered one of the good herbs for cough.

L. Ricinus Communis

Family – Euphorbiaceae Common name – Eranda

Ricinus communis, the castor bean or castor oil plant, is a species of perennial flowering plant. It is a fast-growing, suckering shrub that can reach the size of a small tree, around 12 m. The stem is hollow, erect and grayish green in color. The leaves are glossy and the flowers are green and sometimes red in color. **(Fig.12)** Uses: Its oil and seed extracts have been used as an internal medicine in folk medicine for disorders like severe constipation, worm infestation, rheumatism, intestinal inflammation an also for birth control.

IV. THREATS AND CONSERVATION

Traditional medicines play a very major role. More than 70-80% of the population relies on traditional medicine, while more than 90% use medicinal plants at one time or another. It is more accessible than modern health facilities for most of the population. It is relatively inexpensive, locally available and usually accepted by the local communities as comparable to modern conventional medicine.

The substantial contribution to human health and well being made by medicinal plant species is now widely appreciated and understood.

Indeed, there is a growing demand for many of the species and an increasing interest in their use. This combined with continued habitat loss and erosion of traditional knowledge, is endangering many important medicinal plant species and populations and creating an urgent need for improved methods of conservation and sustainable use of these vital plant resources.

Unmonitored trade of medicinal plant resources, destructive harvesting techniques, overexploitation, habitat loss, and habitat change are the primary threats to medicinal plant resources in most developing countries (IUCN 2001, 2002).

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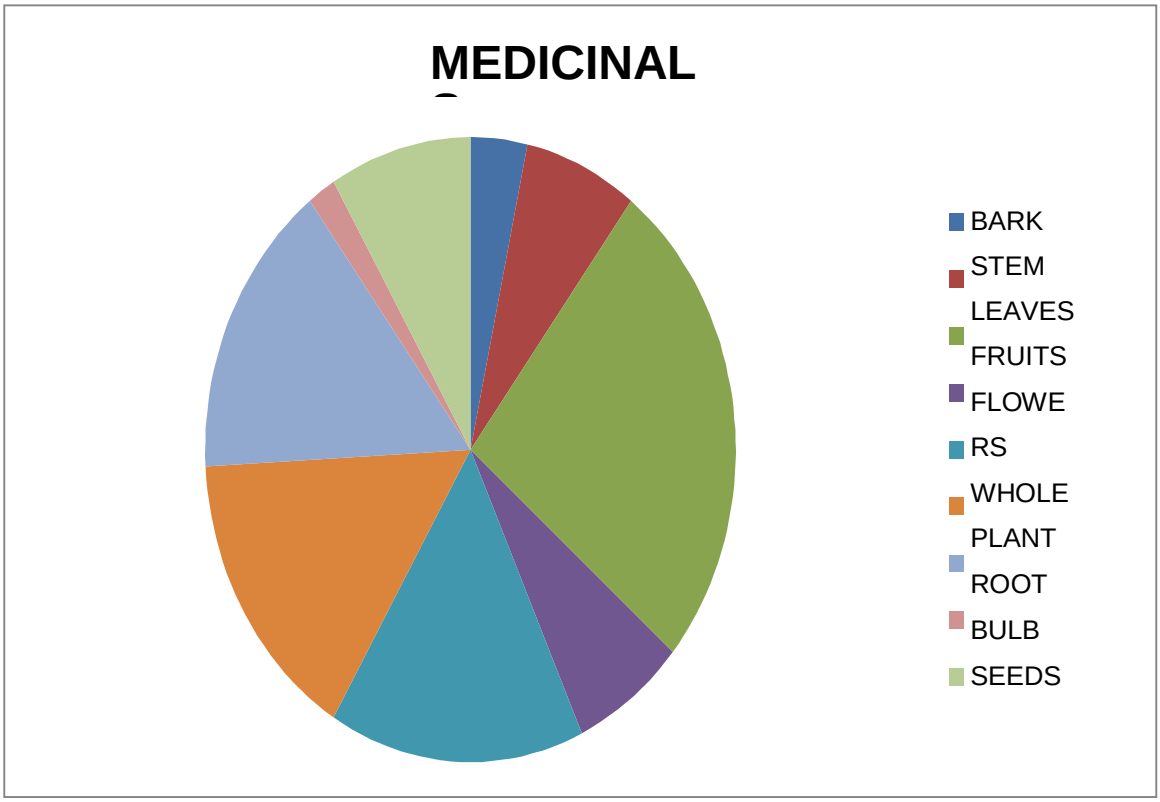

Fig.1 Berberis aristata

Fig. 2 Verbascum Thapsus

Fig 3 Plantago ovata

Fig.4 Roylea cinera

Fig. 5 Cuscuta reflexa

Fig. 6 Dhatura stramonium

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Fig. 7 Hypericum perforatum

Fig 8 Malva parviflora

Fig.9 Mentha piperita

Fig. 10 Vinca major

Fig. 11 Salvia officinalis

Fig. 12 Riccinus communis

V. CONCLUSION

The study of medicinal herbs and shrubs of Solan town of Himachal Pradesh makes us to understand how various plants are important. Present study reveals that 12 medicinal sp. (shrubs and herbs) which were used by the local people of Solan town. A total of 12 genera, 10 families were identified. Various plant parts were used of various species of plants. This is followed by fruits (3 species), stem (1 species), roots/rhizome (3 species), flowers/inflorescence (4species), bark (1 species), leaves (9 species), seeds (3 species); whole plant was used in medicinal preparation in case of 3 species. This document will help in raising awareness for conserving ethnobotanical knowledge for the benefits of future generation. As in today's world demand for the medicinal plants is increasing day by day, so there is a need to aware local people for the cultivation of these medicinal herbs and shrubs. This practice will also self employment as well as help to increase the economy of the state.

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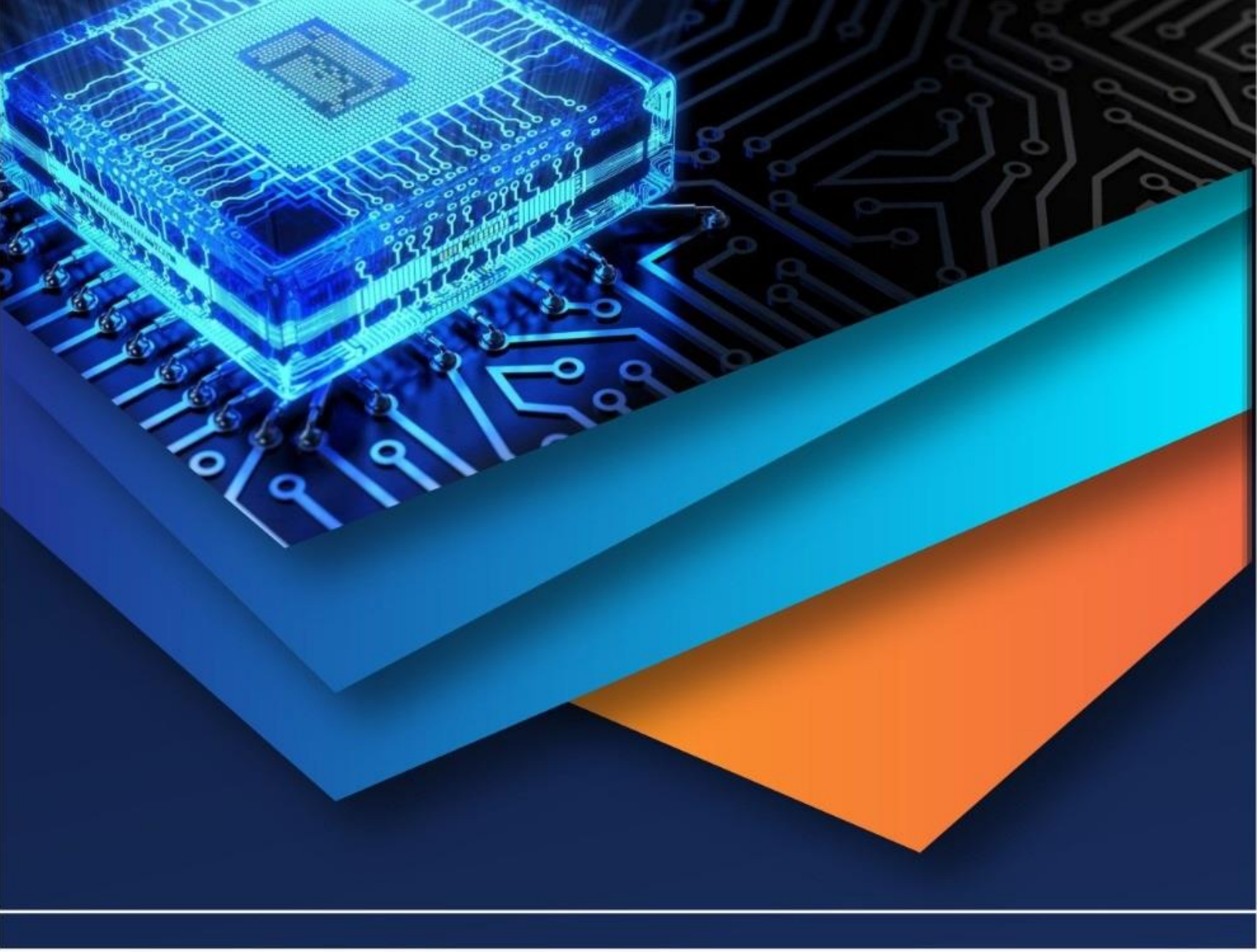

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