# GALGOTIAS COLLEGE OF ENGINEERING AND TECHNOLOGY

# AABSHAAR

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**JUNE 2023** 

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# SIGN OF PEACE



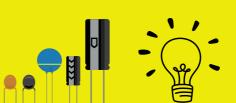
"The Department of Electrical Engineering and the Electrical Engineering Student Association(EESA) proudly presents the department magazine AABSHAAR"



## EESA

**EESA (Electrical Engineering Students Association)** is a vibrant and dynamic departmental club at our college dedicated to bringing together students passionate about electrical engineering. As an integral part of the electrical engineering department, EESA strives to create a supportive and enriching community for its members. The club organizes a wide range of activities, including workshops, seminars, technical competitions, and guest lectures by industry professionals. These events provide valuable opportunities for students to enhance their knowledge, sharpen their skills, and stay updated with the latest trends in the field.





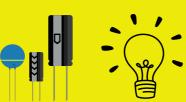
# **OUR MENTORS**



## MR.SUNEEL GALGOTIA

### MR.DHRUV GALGOTIA

## Dr.Md.DANISH EQUBAL







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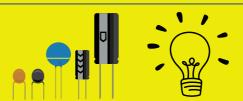
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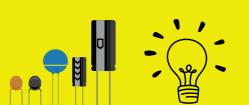
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## **CEO'S MESSAGE**



### MR.DHRUV GALGOTIA

"WITHOUT CONTINUAL GROWTH AND PROGRESS, SUCH WORDS AS IMPROVEMENT, ACHIEVEMENT, AND SUCCESS HAVE NO MEANING" ~ BENJAMIN FRANKLIN

GALGOTIASCOLLEGEOFENGINEERINGANDTECHNOLOGYHASALWAYSTAKEN A KEENINTERESTINRETAININGHIGHACADEMICSTANDARDSASWELLASINTHEHOLISTICEVOLUTIONOFSTUDENTS,DELIVERINGTHEMNUMEROUSOPPORTUNITIESFORSELF-DEVELOPMENT.

IT GIVES ME IMMENSE CONTENTMENT TO NOTE THAT THE DEPARTMENT OF ELECTRICAL ENGINEERING IS BRINGING OUT THE SIXTH VOLUME OF ITS DEPARTMENTAL MAGAZINE "AABSHAAR". I AM SURE THIS MAGAZINE WILL ENCOURAGE THE STUDENTS TO EXPRESS THEIR INNOVATIVE IDEAS AND HARNESS THEIR LITERARY SKILLS OF THE STUDENTS. I EXTEND MY BEST WISHES TO ALL ASSOCIATED WITH THE PUBLICATION OF THIS MAGAZINE.





# **DIRECTOR'S MESSAGE**



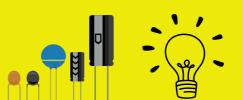
PROF. (DR.) MOHD. ASIM QADRI

GALGOTIAS COLLEGE OF ENGINEERING AND TECHNOLOGY HAS ALWAYS ASPIRED TO CULTIVATE AN ECOSYSTEM CONDUCIVE TO PERTINENT TO LEARNING AND TEACHING WHILE ALSO ENCOURAGING STUDENTS TO EXPLORE THEIR TALENTS TO THE FULLEST.

I AM DELIGHTED TO KNOW THAT THE DEPARTMENT OF ELECTRICAL ENGINEERING IS RELEASING THE SIXTH VOLUME OF ITS DEPARTMENTAL MAGAZINE "AABSHAAR". I AM SURE THIS MAGAZINE WILL REFLECT THE ACADEMIC AND CULTURAL ACTIVITIES OF THE DEPARTMENT AND WILL PROVIDE A PLATFORM FOR THE STUDENTS TO REALIZE THEIR LITERARY ATTRIBUTES.

MY BEST WISHES ARE WITH THE EDITORIAL BOARD.





## HOD'S MESSAGE



## DR.MD.DANISH EQUBAL HOD

WITHOUT LABOR, NOTHING PROSPERS. THERE ARE NO SECRETS TO SUCCESS. IT IS THE RESULT OF PREPARATION, HARD WORK, AND LEARNING FROM FAILURE.

THE DEPARTMENT OF ELECTRICAL ENGINEERING FOCUSES ON STUDENTS ACHIEVING ACADEMIC EXCELLENCE WHILE ALSO FACILITATING THE GROWTH OF STUDENTS THROUGH EXTRACURRICULAR ACTIVITIES. KEEPING THIS IN MIND, THE DEPARTMENTAL MAGAZINE "AABSHAAR" IS PUBLISHED EACH YEAR TO EXPLORE THE CREATIVE TALENTS OF THE STUDENTS AND DISSEMINATE THEIR INNOVATIVE THOUGHTS AND IDEAS. THIS MAGAZINE ALSO PROVIDES AN INSIGHT INTO THE ACADEMIC, CULTURAL, SPORTS, LITERARY AND OTHER ACCOMPLISHMENTS OF THE STUDENTS.

WORKING IN TEAMS INCREASES COLLABORATION. AND THE SHARING OF IDEAS AND CAN GO A LONG WAY IN GIVING TEAMS A PRODUCTIVITY BOOST. THIS ENSURES THERE ARE NO WEAK POINTS IN GROUP EFFORTS.

I CONGRATULATE THE ENTIRE TEAM FOR THEIR EFFORTS IN PUBLISHING THIS MAGAZINE.





# **MISSION OF DEPARTMENT**

**"TO BECOME A PIONEER DEPARTMENT IN PRODUCING COMPETENT, INNOVATIVE, AND SOCIALLY RESPONSIBLE ELECTRICAL ENGINEERS."** 

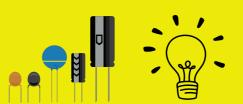
## **VISION OF DEPARTMENT**

''TO PROVIDE A QUALITY EDUCATION THROUGHCONTINUOUS UP-GRADATION OF FACILITIES ANDMENTORING CONDUCIVE TO THE DEPARTMENT.''

**"TO PROMOTE RESEARCH AND INNOVATIVE PRACTICES FOCUSSING ON THE NEEDS OF INDUSTRY."** 

**"TO TRANSFORM STUDENTS INTO SOCIALLY COGNIZANT PROFESSIONALS AND ENTREPRENEURS WITH AMICABLE INTERPERSONAL AND COMMUNICATION SKILLS".** 





# PROGRAM'S EDUCATIONAL OBJECTIVES

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**GRADUATES SHALL BE ABLE TO:** 

- EXHIBIT TECHNICAL COMPETENCE IN ELECTRICAL ENGINEERING AND ALLIED FIELDS AND ATTAIN FEASIBLE SOLUTIONS BEST SUITED TO THE INDUSTRY NEEDS.
- ADAPT TO THE LATEST GLOBAL TECHNOLOGIES AND OPTIMALLY UTILIZE RESOURCES TO DEVELOP AND CREATE SOLUTIONS FOR ENGINEERING PROBLEMS
- PERFORM AS SKILLED PROFESSIONALS AND ENTREPRENEURS THROUGH GOOD COMMUNICATION SKILLS AND ETHICS.





## **INTRODUCTION TO FACULTY**



DR.MD.DANISH EQUBAL HOD



#### DR. SUNIL CHAUDHARY PROFESSOR



DR. V. S. GUPTA

**PROFESSOR** 

DR. PINKI YADAV PROFESSOR



DR. MD. SHAHID PROFESSOR



DR. AMIT KUMAR SHARAMA ASSOCIATE PROFESSOR

# **INTRODUCTION TO FACULTY**



**MS. PREETI DHIMAN** ASSISTANT PROFESSOR



**MR. THAKUR ANKIT KRISHAN KUMAR** ASSISTANT PROFESSOR



**MR. PROBEER SAHW** ASSISTANT PROFESSOR



**MS. LIPIKA DUTTA** 





**MR. DINESH PRASAD** ASSISTANT PROFESSOR ASSISTANT PROFESSOR

**MR. MANOJ SAINI** ASSISTANT PROFESSOR



**MR. SURENDRA KUMAR PAL** ASSISTANT PROFESSOR



**DR. BHUVNESH KHOKHAR** ASSISTANT PROFESSOR

## **ABOUT AABSHAAR**

AABSHAAR IS ORIGINALLY AN URDU WORD **DEFINES** WATERFALL. THAT AS THE WATERFALL SYMBOLIZES " SIGN OF PEACE ". SO DOES OUR MAGAZINE AND THAT IS WHY IT WAS NAMED AFTER IT. I BELIEVE THAT THE MAGAZINE PROVIDES US A PLATFORM TO WORK WITH DIFFERENT PEOPLE AS A TEAM TO **BRING OUT THE BEST OF OUR RESULTS. ACTIVE** ENGAGEMENT IN COLLABORATIVE PROJECTS CAN CREATE A SYNERGY AMONG ALL OF US THAT OFTEN SURPASSES WHAT CAN BE LEARNED INDIVIDUALLY. THROUGH THIS MEDIUM, WE LEARN TOGETHER AND GROW TOGETHER. ALSO, THE ABILITY TO WORK **TOGETHER IN TEAMS IS A SKILL NEEDED IN TODAY'S WORKFORCE.** 





## **EDITORIAL BOARD**



Dr. Md. Danish Equbal Student Advisor



Mr. Thakur Ankit Krishna Kumar Student Co-advisor



Vaibhay Ujjwal Chief Editor



Shashwat Chaudhary Editor



Bhavya Tiwari Editor

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Vaibhav Ujjwal General Secretary



Himanshu Shekhar Joint Secretary



Mr.Thakur Ankit Krishna Kumar Vice-President



Bhavya Tiwari Secretary



Anurag Singh Treasure

## **STUDENT BODY OF EESA**



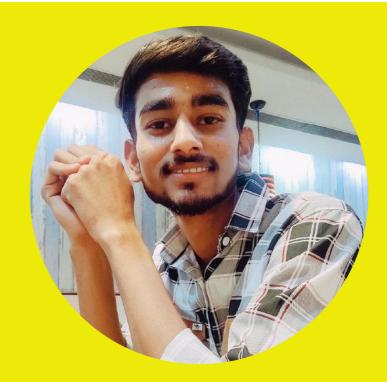
Vaibhav Ujjwal General Secretary



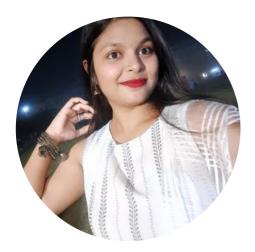
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Nishit Solanki Technical Head



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Aryan Prashad Sport Head



Shivangi Singh Decor Head



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Praveen Kumar Social Media Head



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Shashwar Mishra Photography Coordinator



Aditya Gupta Management Coordinator



Shirshak Chauhan Sport Coordinator



Aman Kumar Verma Photography Coordinator



Unnati Pandey Decor Cordinator

# FROM GENERAL SECRETARY'S PEN



### VAIBHAV UJJWAL

" LIFE IS NOT THE WAY YOU SUPPOSE IT TO BE, IT'S THE WAY IT IS. THE WAY YOU COPE IS WHAT MAKES THE DIFFERENCE."

THE WORLD WE LIVE IN TODAY LOOKS DRASTICALLY **DIFFERENT FROM THE ONE WE KNEW JUST A FEW MONTHS** BACK. THE TRANSITION HAS NOT BEEN EASY BUT AGAIN OUR UNDAUNTED EFFORTS HELPED US TO RISE ABOVE THE ADVERSITIES AND WE ENTERED INTO A NEW WORLD OF HOPE, OPTIMISM AND ZEAL FOR A NEW BEGINNING. I AM VERY PROUD OF OUR DEPARTMENTAL SOCIETY OF **ELECTRICAL ENGINEERING - EESA, WHICH SUCCESSFULLY** TRANSITIONED TO ONLINE MODE. WE WERE CONTINUOUSLY AIMING TO PROVIDE EACH OF OUR **MEMBERS WITH SKILL-BASED, TECHNICAL, THAT THEY** ARE BEING CHALLENGED TO LEARN EVERY DAY. I CAN STILL REMEMBER THE MUCH-AWAITED DAY OF THE **INAUGURATION CEREMONY, ON 11TH NOVEMBER 2020,** WHEN I WAS GIVEN THE POST OF GENERAL SECRETARY IN **ELECTRICAL ENGINEERING STUDENT ASSOCIATION (EESA), OUR DEPARTMENTAL SOCIETY.** 

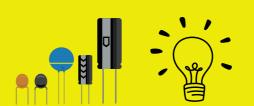


THIS YEAR MARKED THE 3RD GRACEFUL YEAR OF OUR DEPARTMENTAL SOCIETY. I WOULD LIKE TO THANK OUR **HEAD OF DEPARTMENT & ALL OTHER FACULTY MEMBERS** FOR BESTOWING ME WITH THIS OPPORTUNITY. ON **BEHALF OF THE ENTIRE SOCIETY, I WOULD LIKE TO THANK OUR MEMBERS FOR THEIR GREAT EFFORTS. EVEN AFTER REOPENING THE COLLEGE WE WILL REMAIN CENTERED** ON ENSURING THE HEALTH SAFETY AND WELL-BEING OF THE MEMBERS. I AM DELIGHTED TO CELEBRATE THE LAUNCH OF OUR DEPARTMENT'S MAGAZINE AABSHAAR "SIGN OF PEACE"I WOULD LIKE TO EXTEND A VERY WARM WELCOME TO THE READERS OF AABSHAAR. I TAKE THIS THANK ALL HAVE **OPPORTUNITY** TO OF WHOM **VOLUNTEERED TO CONTRIBUTE TO THE SUCCESS OF THE MY SINCEREST GRATITUDE** MAGAZINE. TO **OUR PRESIDENT & HOD DR. DANISH EQUBAL AND ALL OTHER** FACULTY MEMBERS FOR THEIR UNCONDITIONAL SUPPORT AND GUIDANCE. I ALSO EXTEND KUDOS TO THE **MAGAZINE COMMITTEE FOR BRINGING OUT THEIR NEW VOLUME OF THE MAGAZINE.** 

**VAIBHAV UJJWAL** 

GENERAL SECRETARY,EESA





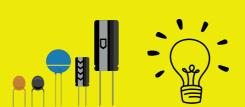
# FROM CHEIF EDITOR'S PEN



VAIBHAV UJJWAL

THE BEAUTIFUL LINES QUOTED BY SWAMI VIVEKANAND, "TAKE UP ONE IDEA. MAKE THAT ONE IDEA YOUR LIFE -THINK OF IT, DREAM OF IT, LIVE ON THAT IDEA. LET THE **BRAIN, MUSCLES, NERVES, EVERY PART OF YOUR BODY, BE** FULL OF THAT IDEA, AND JUST LEAVE EVERY OTHER IDEA ALONE. THIS IS THE WAY TO SUCCESS." THIS MAGAZINE WAS THAT ONE IDEA FOR US. WE FACED MANY **CHALLENGES WHILE MAKING THIS MAGAZINE BUT THE** HARDSHIP OF EVERYONE RESULTED IN A MASTERPIECE THE NAME OF THE MAGAZINE "AABSHAAR" WHICH **MEANS WATERFALL, SIGNIFIES PEACE. THE PEACE THAT BRINGS HARMONY WITH EVERYTHING AROUND US. IT GIVES US A PERFECT LESSON THAT, "WATERFALL** WOULDN'T SOUND SO MELODIOUS IF THERE WERE NO **ROCKS IN THEIR WAY", IN A SIMILAR WAY WE HAVE TO** FACE THE CHALLENGES IN OUR LIVES AND LEARN FROM THEM. PEACE CAN BE ACHIEVED BY INTERNAL HARMONY.





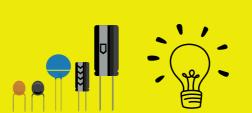
WATERFALL ALSO SYMBOLIZES THE PROCESS OF LETTING GO, THE PROCESS OF CLEANSING, AND THE CONTINUOUS FLOW OF ENERGY AND LIFE. WATER GENERALLY HAS A SPECIAL PLACE AS IT IS CONSIDE.RED TOHAVE SPIRITUAL CLEANSING POWERS AND IS SACRED

THE WATERFALL SYMBOL IN PARTICULAR CAN MEAN THAT SEVERE DISAPPOINTMENT WILL MAKE YOU WISER. WATERFALLS OFTEN RELATE TO A GREAT RELEASE OF EMOTION, REJUVENATION, AND RENEWAL OF SPIRIT

I'M PROUD TO BE THE CHIEF EDITOR OF OUR MAGAZINE AND ALL THIS WAS POSSIBLE BECAUSE OF THE UNCONDITIONAL SUPPORT OF OUR PRESIDENT, STUDENT ADVISORS, FACULTY MEMBERS, GENERAL SECRETARY, AND A TEAM OF EXCELLENT EDITORS.

Vaibhav Ujjwal General Secretary





# FROM SECRETARY'S PEN



# Bhavya Tiwari

THE ULTIMATE PRODUCTIVITY HACK IS SAYING NO. NOT DOING SOMETHING WILL ALWAYS BE FASTER THAN DOING IT. THIS STATEMENT REMINDS ME OF THE OLD COMPUTER PROGRAMMING SAYING, "REMEMBER THAT THERE IS NO CODE FASTER THAN NO CODE."

THE SAME PHILOSOPHY APPLIES IN OTHER AREAS OF LIFE. FOR EXAMPLE, THERE IS NO MEETING THAT GOES FASTER THAN NOT HAVING A MEETING AT ALL.

THIS IS NOT TO SAY YOU SHOULD NEVER ATTEND ANOTHER MEETING, BUT THE TRUTH IS THAT WE SAY YES TO MANY THINGS WE DON'T ACTUALLY WANT TO DO. THERE ARE MANY MEETINGS HELD THAT DON'T NEED TO BE HELD. THERE IS A LOT OF CODE WRITTEN THAT COULD BE DELETED.



HOW OFTEN DO PEOPLE ASK YOU TO DO SOMETHING AND YOU JUST REPLY, "SURE THING." THREE DAYS LATER, YOU'RE OVERWHELMED BY HOW MUCH IS ON YOUR TO-DO LIST. WE BECOME FRUSTRATED BY OUR OBLIGATIONS EVEN THOUGH WE WERE THE ONES WHO SAID YES TO THEM IN THE FIRST PLACE

IT'S WORTH ASKING IF THINGS ARE NECESSARY. MANY OF THEM ARE NOT, AND A SIMPLE "NO" WILL BE MORE PRODUCTIVE THAN WHATEVER WORK THE MOST EFFICIENT PERSON CAN MUSTER.

BUT IF THE BENEFITS OF SAYING NO ARE SO OBVIOUS, THEN WHY DO WE SAY YES SO OFTEN?

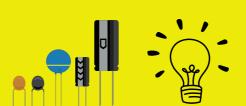
I LIKE HOW THE ECONOMIST TIM HARFORD PUT IT, "EVERY TIME WE SAY YES TO A REQUEST, WE ARE ALSO SAYING NO TO ANYTHING ELSE WE MIGHT ACCOMPLISH WITH THE TIME." ONCE YOU HAVE COMMITTED TO SOMETHING, YOU HAVE ALREADY DECIDED HOW THAT FUTURE BLOCK OF TIME WILL BE SPENT.

IN OTHER WORDS, SAYING NO SAVES YOU TIME IN THE FUTURE. SAYING YES COSTS YOU TIME IN THE FUTURE. NO IS A FORM OF TIME CREDIT. YOU RETAIN THE ABILITY TO SPEND YOUR FUTURE TIME HOWEVER YOU WANT. YES IS A FORM OF TIME DEBT. YOU HAVE TO PAY BACK YOUR COMMITMENT AT SOME POINT.

NO IS A DECISION. YES IS A RESPONSIBILITY.

### BHAVYA TIWARI SECRETARY





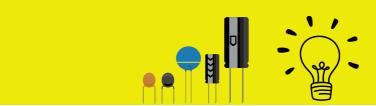
# CREATIVITY IS A PROCESS, NOT AN EVENT

Creativity, often hailed as the spark that ignites innovation, is a multidimensional and evolving process. It is not a solitary event but rather a journey that unfolds through various stages. By understanding and embracing creativity as a process, individuals and organizations can foster a fertile ground for originality, problem-solving, and transformative ideas. In this article, we delve into the dynamic nature of creativity, highlighting the stages involved and the significance of iteration in nurturing innovation.

**The Iterative Nature of Creativity:** 

1. Preparation: The creative process begins with a solid foundation of knowledge and understanding. It involves immersing oneself in relevant subjects, exploring diverse perspectives, and gathering inspiration. This stage sets the groundwork for generating ideas and allows for the synthesis of seemingly unrelated concepts.

2. Incubation: After the preparation phase, the mind needs time to digest and assimilate the information. The incubation stage is characterized by subconscious processing, where ideas gestate and connections form beneath the surface of conscious thought. This period of reflection and mental relaxation enables the emergence of fresh insights.



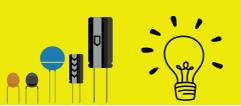
3. Inspiration: The eureka moments associated with creativity often occur during the inspiration stage. These breakthroughs are triggered by unexpected connections, sudden realizations, or flashes of insight. Inspiration can strike at any moment, often when we least expect it, and it is crucial to embrace and capture these sparks of creativity.

4 Generation: With inspiration as fuel, the generation stage commences. This is a time of active brainstorming, idea exploration, and experimentation. It involves divergent thinking, where a plethora of possibilities is generated without judgment or constraint. Quantity takes precedence over quality as the aim is to explore different angles and perspectives.

5. Evaluation: Once a multitude of ideas has been generated, the evaluation stage comes into play. Here, ideas are critically examined, refined, and narrowed down based on feasibility, relevance, and alignment with the desired outcome. A discerning eye and the ability to objectively assess ideas are vital to discern which ones hold the most promise.

6. Implementation: Creativity finds its culmination in the implementation stage. This is where ideas are transformed into tangible realities, refined, and adapted as necessary. It involves resource allocation, collaboration, and the resilience to overcome obstacles. The implementation stage requires a balance of creative vision and practical execution to bring ideas to life.





7. Reflection: A crucial but often overlooked stage, reflection, concludes the creative process. Reflecting on the entire journey enables learning, growth, and improvement. It allows for the identification of strengths, weaknesses, and areas for further development. By embracing this stage, individuals can refine their creative approaches and enhance their future endeavors.

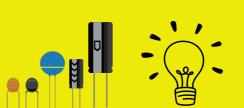
#### **The Power of Iteration:**

Creativity as a process thrives on iteration. It is not a linear path but a cyclical and iterative journey. Each stage builds upon the previous one, and the process is repeated as ideas evolve, adapt, and improve. Iteration encourages refinement, learning from mistakes, and exploring alternative avenues. Through each iteration, creativity becomes more refined, informed, and impactful.

#### The Benefits of Embracing Creativity as a Process:

1. Enhanced Problem-Solving: Viewing creativity as a process cultivates a mindset that actively seeks solutions and embraces challenges. It encourages individuals to approach problems from various angles, fostering a more holistic problem-solving approach.





2. Continuous Growth: Engaging in the creative process nurtures personal and professional growth. It enhances adaptability, resilience, and critical thinking skills. Through each iteration, individuals gain insights, learn from experiences, and develop a deeper understanding of their creative potential.

#### **Conclusion:**

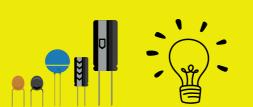
Creativity is not a fleeting event but an ongoing and iterative process. By acknowledging and embracing this reality, individuals and organizations can unlock their creative potential, fuel innovation, and overcome challenges. The stages of preparation, incubation, inspiration, generation, evaluation, implementation, and reflection guide the creative journey, allowing for continuous growth and transformative ideas. Remember, the process of creativity is a rewarding and evolving endeavor that can lead to groundbreaking solutions and novel perspectives in all aspects of life.





ADITYA GUPTA 2nd Year





# Quantum Computation: Unleashing the Power of Quantum Mechanics

### **Introduction:**

The world of computing is on the cusp of a revolution, poised to transcend the limits of classical computing and explore new frontiers of computation. At the heart of this revolution lies quantum computation, an emerging field that harnesses the peculiar properties of quantum mechanics to revolutionize information processing. In this article, we delve into the realm of quantum computation, exploring its principles, potential applications, and the challenges that lie ahead.

#### **Understanding Quantum Mechanics:**

Quantum mechanics, the branch of physics that describes the behavior of matter and energy at the smallest scales, introduces us to a realm of strange and counterintuitive phenomena. Key among these is superposition and entanglement. Superposition allows quantum particles to exist in multiple states simultaneously, while entanglement enables the correlation between particles regardless of distance. These properties lay the foundation for quantum computation's immense power.



#### The Basics of Quantum Computation:

Unlike classical computers that operate on bits (0s and 1s), quantum computers harness quantum bits, or qubits, which can exist in a superposition of both 0 and 1 states. This ability to simultaneously represent multiple states exponentially increases computational power. Qubits can be manipulated through quantum gates, analogous to classical logic gates, to perform operations on quantum information.

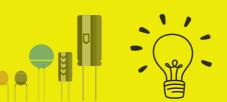
#### **Quantum Algorithms and Applications:**

Quantum computation offers the potential to solve problems that are intractable for classical computers. One such example is Shor's algorithm, which efficiently factors large numbers, threatening the security of cryptographic systems. Quantum computers also excel in simulating quantum systems, enabling the study of complex molecules, materials, and chemical reactions. Additionally, they have the potential to optimize complex optimization problems and improve machine learning algorithms.

#### **Current Challenges and Progress:**

Building a practical quantum computer is no easy feat. Quantum systems are inherently fragile, prone to errors caused by environmental disturbances and decoherence. Overcoming these challenges requires advances in error correction, and improving qubit coherence times. Progress is being made as researchers and companies worldwide pursue different approaches such as superconducting circuits, trapped ions, topological qubits, and more.





#### **The Quantum Computing Landscape:**

Several organizations, including technology giants and research institutions, are investing heavily in quantum computing research and development. They aim to harness the power of quantum computation to revolutionize fields such as cryptography, drug discovery, optimization, and artificial intelligence. As quantum technology advances, more applications will be discovered, transforming industries and unlocking new possibilities.

#### **The Future Potential:**

Quantum computation holds immense promise for solving complex problems faster and more efficiently. From revolutionizing cryptography to accelerating scientific discoveries, its impact is far-reaching. The potential for quantum machine learning and quantum artificial intelligence is also a frontier awaiting exploration. However, it's essential to manage expectations, as quantum computers are still in their early stages, and many challenges remain to be addressed before their full potential can be realized.

#### **Collaboration and Education**

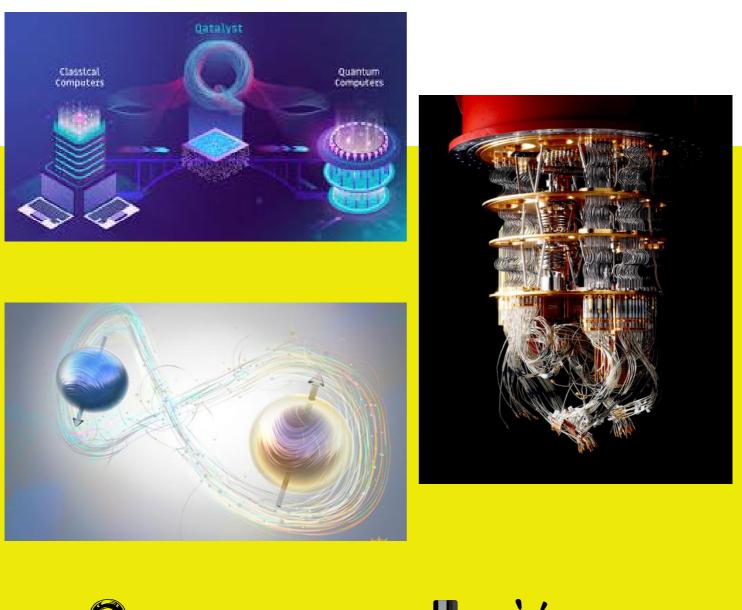
Advancing the field of quantum computation requires interdisciplinary collaboration among physicists, mathematicians, computer scientists, and engineers. Educating and training the next generation of quantum scientists and engineers is vital to drive innovation in this field. Governments, academia, and industry need to come together to support research initiatives, funding, and infrastructure development to accelerate progress.



#### **Conclusion:**

Quantum computation represents a paradigm shift in computing, offering the potential to tackle problems that were once considered insurmountable. As researchers and engineers continue to push the boundaries of quantum technology, we stand at the precipice of a new era of computation. With ongoing advancements, increased collaboration, and investment, the transformative power of quantum computation can be harnessed to shape the future of technology, science, and society at large.

Shashwat Chaudhary 2nd Year





# **Cybersecurity: Safeguarding the Digital World**

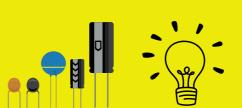
#### Introduction:

In an increasingly interconnected and digitized world, the importance of cybersecurity cannot be overstated. The rapid growth of technology and the prevalence of cyber threats pose significant risks to individuals, businesses, and governments. Cybersecurity measures are essential to protect sensitive information, defend against cyberattack, and ensure the integrity, confidentiality, and availability of digital systems. In this article, we explore the significance of cybersecurity, common threats, and proactive measures to safeguard the digital landscape.

### **Understanding Cybersecurity:**

Cybersecurity encompasses the practices, technologies, and processes designed to protect computers, networks, and data from unauthorized access, theft, damage, or disruption. It involves a holistic approach that addresses various dimensions, including people, processes, and technology. The primary objectives of cybersecurity are to maintain the confidentiality of sensitive information, preserve the integrity of data, and ensure the availability of critical systems.





#### **Common Cyber Threats:**

1. Malware: Malicious software, such as viruses, worms, ransomware, and spyware, pose a significant threat to computer systems and networks. These programs can infiltrate devices, compromise data, and disrupt operations.

2. Phishing: Phishing attacks involve deceptive emails, messages, or websites that trick individuals into revealing sensitive information, such as passwords or credit card details. It is a prevalent method used by cybercriminals to gain unauthorized access or perpetrate identity theft.

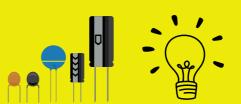
3. Data Breaches: Data breaches occur when unauthorized individuals gain access to sensitive information stored by organizations. These breaches can result in financial loss, reputational damage, and compromise individuals' privacy.

4. Social Engineering: Social engineering techniques exploit human psychology to manipulate individuals into divulging sensitive information or performing actions that compromise security.

5. Distributed Denial of Service (DDoS): DDoS attacks overload networks or servers with a flood of traffic, rendering them inaccessible to legitimate users. These attacks disrupt services, cause financial loss, and impact user experience.

**Proactive Measures for Cybersecurity:** 





1. Strong Passwords and Authentication: Implementing complex, unique passwords and multi-factor authentication adds an extra layer of security. Password managers can help generate and manage strong passwords across various accounts.

2. Regular Software Updates and Patching: Keeping software, operating systems, and applications up to date ensures that security vulnerabilities are addressed, reducing the risk of exploitation.

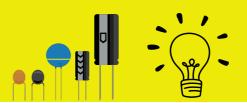
3. Employee Awareness and Training: Educating employees about cybersecurity best practices, such as identifying phishing attempts, recognizing social engineering techniques, and maintaining data security, is crucial in creating a security-conscious culture.

4. Network Security: Deploying firewalls, intrusion detection systems, and antivirus software helps protect networks from unauthorized access, malware, and other threats. Network segmentation and access controls limit the impact of potential breaches.

5. Data Encryption: Encrypting sensitive data both at rest and in transit provides an additional layer of protection, ensuring that even if data is compromised, it remains unreadable and unusable to unauthorized individuals.

6. Incident Response and Disaster Recovery: Establishing an incident response plan enables organizations to respond swiftly and effectively to security incidents. Regular backups and disaster recovery plans are essential for minimizing downtime and ensuring business continuity.





7. Continuous Monitoring and Threat Intelligence: Employing robust monitoring systems, security analytics, and threat intelligence helps identify and respond to emerging threats promptly. Proactive monitoring allows for early detection and mitigation of potential security breaches

### **Conclusion:**

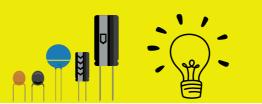
In a digital landscape where cyber threats continue to evolve and grow in sophistication, cybersecurity remains an ongoing priority. Protecting sensitive information, maintaining system integrity, and ensuring the availability of digital resources require a proactive and multi-layered approach. By implementing robust cybersecurity measures, staying informed about emerging threats, and fostering a culture of security awareness, individuals, organizations, and governments can mitigate risks and safeguard the digital world we rely on.

> Shirshak Chauhan 2nd Year









# **CLIMATE CHANGE**

In recent decades, the world has witnessed the alarming consequences of climate change, reaffirming the urgent need for immediate action. The Earth's climate is rapidly changing, primarily due to human activities, posing significant threats to ecosystems, communities, and future generations. This article explores the causes and impacts of climate change and emphasizes the importance of collective efforts to mitigate its effects and build a sustainable future

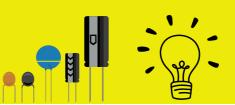
## **Understanding Climate Change**

The impacts of climate change are diverse and far-reaching, affecting various aspects of our planet and daily lives. Rising temperatures have resulted in more frequent and intense heatwaves, jeopardizing public health, particularly vulnerable populations. Extreme weather events like hurricanes, droughts, and floods have become more severe and frequent, causing devastating economic losses and displacing communities.

### **Impacts of Climate Change**

The impacts of climate change are diverse and far-reaching, affecting various aspects of our planet and daily lives. Rising temperatures have resulted in more frequent and intense heatwaves, jeopardizing public health, particularly vulnerable populations. Extreme weather events like hurricanes, droughts, and floods have become more severe and frequent, causing devastating economic losses and displacing communities.





Sea-level rise, attributed to melting ice caps and thermal expansion of ocean waters, threatens coastal regions, leading to increased flooding, erosion, and the loss of vital habitats. Changes in precipitation patterns disrupt agriculture, water availability, and ecosystems, jeopardizing food security and exacerbating water scarcity.

Furthermore, climate change poses a severe threat to biodiversity. Species struggle to adapt to rapidly changing conditions, leading to habitat loss and extinction. Ecosystem disruptions have cascading effects on ecological balance, disrupting the services they provide, such as water purification, pollination, and carbon sequestration

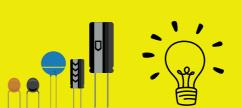
### A Call to Action

Addressing climate change requires immediate and concerted action on local, national, and global levels. Here are key areas where collective efforts are crucial:

1.Transition to Clean Energy: Shifting from fossil fuels to renewable energy sources, such as solar, wind, and hydroelectric power, is essential. Governments, businesses, must invest in renewable energy infrastructure and promote energy efficiency to reduce greenhouse gas emissions.

2.Sustainable Land Use: Protecting and restoring forests, which act as carbon sinks, is vital. Sustainable land management practices, including reforestation and halting deforestation, can help mitigate climate change.





3.Climate-Friendly Policies: Governments must adopt and enforce policies that incentivize low-carbon practices and technologies. Carbon pricing, subsidies for renewable energy, and regulations to reduce emissions from industries are crucial for promoting sustainable development.

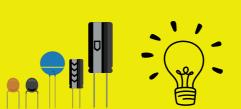
4.Public Awareness and Education: Raising awareness about climate change and its impacts is essential for fostering public support and engagement. Education programs can empower individuals to adopt sustainable lifestyles, make informed choices, and demand climatefriendly policies.

5.International Cooperation: Collaboration among nations is crucial to combat climate change effectively. International agreements, like the Paris Agreement, provide a framework for collective action, emphasizing the need for global emission reductions and supporting vulnerable countries in adapting to climate impacts

#### Conclusion

Climate change poses one of the greatest challenges humanity has ever faced. Its impacts are evident and demand immediate action. By transitioning to clean energy, adopting sustainable practices, implementing climate-friendly policies, raising awareness, and fostering international cooperation, we can mitigate the effects of climate change and build a sustainable future for generations to come.





. Let us recognize the urgency and collective responsibility we hold in addressing climate change, as our actions today will determine the fate of our planet tomorrow.

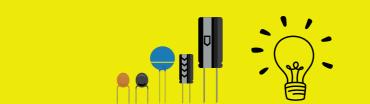
"The Earth will not continue to offer its harvest, except with faithful stewardship. We cannot say we love the land and then take steps to destroy it for use by future generations."

- Pope John Paul II

"The climate crisis is the greatest challenge humanity has ever faced. It will take a determined, concerted effort from every sector of society to tackle it." - Al Gore

> Aman Kumar Verma 2nd Year







# **Very Large-Scale Integration**

VLSI, which stands for Very Large-Scale Integration, refers to the process of creating integrated circuits (ICs) or chips with a large number of transistors and other electronic components on a single chip. It is a technology that has revolutionized the field of electronics by allowing the creation of complex and powerful electronic devices.

In VLSI, the goal is to pack as many transistors as possible onto a single chip to increase functionality, improve performance, and reduce the size and cost of electronic devices. VLSI technology has enabled the development of various electronic devices, including microprocessors, memory chips, digital signal processors, application-specific integrated circuits (ASICs), and more.

Very Large-Scale Integration (VLSI) has emerged as a groundbreaking technology that revolutionizes the field of electronics, enabling the creation of powerful, compact, and energy-efficient electronic devices. From microprocessors to memory chips and beyond, VLSI has propelled the digital revolution, opening doors to a plethora of innovative applications across various industries.





#### The Power of Integration:

At the heart of VLSI lies the concept of integration - packing an unprecedented number of transistors and electronic components onto a single chip. This integration has allowed for the development of increasingly complex and feature-rich electronic devices, providing tremendous computational power and functionality.

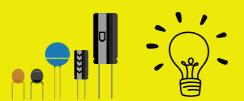
#### The Growth of Transistors:

Transistors, the fundamental building blocks of digital circuits, have undergone a remarkable evolution in VLSI technology. With each passing year, the number of transistors that can be integrated onto a chip has multiplied exponentially, following Moore's Law. This exponential growth has propelled the capabilities of electronic devices, enabling faster processing speeds, increased storage capacities, and enhanced functionality.

#### **Advancements in Design:**

Design plays a critical role in VLSI, with engineers employing sophisticated Computer-Aided Design (CAD) tools to facilitate the design process. These tools assist in circuit simulation, logic synthesis, layout design, and verification, enabling designers to optimize performance, power consumption, and area utilization. Moreover, advancements in design methodologies have led to the development of System-on-Chip (SoC) designs, integrating multiple functions on a single chip, further enhancing efficiency and reducing costs.





## **Power Efficiency and Performance**

VLSI technology has not only enabled greater computational power but has also focused on power efficiency. Through innovations in circuit design and power management techniques, VLSI engineers have been able to strike a balance between performance and energy consumption. Lowpower design methodologies, such as voltage scaling and clock gating, have significantly contributed to extending battery life in portable devices and reducing energy consumption in various applications.

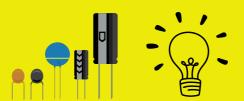
## **Applications and Impact:**

The impact of VLSI technology can be witnessed across numerous industries. In consumer electronics, VLSI has enabled the development of smartphones, tablets, wearables, and smart home devices that provide advanced functionality and connectivity. In healthcare, VLSI has facilitated the creation of medical devices, such as implantable devices and diagnostic equipment, contributing to improved patient care. Additionally, VLSI has played a pivotal role in sectors like automotive, aerospace, telecommunications, and more, driving innovation and transforming the way we live and work.

### **Future Prospects:**

Looking ahead, VLSI technology continues to hold immense potential. Advancements in VLSI are crucial for emerging technologies like artificial intelligence, Internet of Things (IoT), and autonomous systems.





The integration of VLSI with these fields opens up new avenues for intelligent devices, autonomous vehicles, smart cities, and interconnected systems that will shape the future.

#### **Conclusion:**

VLSI technology has been a driving force behind the digital revolution, propelling advancements in electronic devices and transforming industries across the globe. Through relentless innovation and continuous integration **VLSI** engineers have harnessed of the transistors. power of miniaturization, efficiency, and performance, unlocking new possibilities for technology. As VLSI continues to evolve, it paves the way for a connected, intelligent future, where electronic devices seamlessly enhance our lives in ways we never imagined.

> Shashwat Chaudhary 2nd Year





# GCET

In the land of knowledge park 3, where gcetians unite, From A.B HOSTEL TO ALPHA 1 ... Students strive to prove their might, A place of dreams and endless debates, Where satire thrives and irony grates.

(1st year--1st sem)

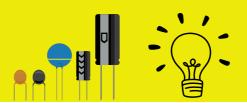
In the land of freshmen, all wide-eyed and bright, They walk with enthusiasm, ready to take flight, But soon as they realize, with a hint of dismay, That assignments and exams rule theirs every day.

In the boys hostels, friendships quickly take shape, Oh, the allure of freedom, away from home's care, a mix of hope and plight....

(1st year --- 2nd sem)

Its a sem where hearts flutter, Amidst the code and equations we write, In the corner of the E block library... Two nerds collide..., Our eyes meet over algorithms we confide...





On the CDE ground there's a blissful trance In cafeteria ...((in this story)) our friendship Is deep seated... Though lectures and labs something new entangles.. Days after day something new is born....

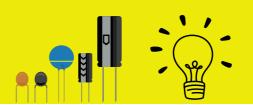
(2nd year -3rdsem)

As the second years reside, Love and failure, an ironic twist we ride. In the lecture halls, love's symphony begins, But oh,oh,,ohh,ohhh, the irony, as hearts collide, Some (not we)find love's bliss, while others step aside.

(2nd year ..4th sem)

Amidst the bustling campus, failures take their toll, Midterms and assignments, a relentless role. Consistency, a virtue I seek to grasp, Yet amidst the chaos, I learn to endure, For in the ironic dance of love and plight, I navigate the second year's tricky height.





(3rd and 4th year)

Project presentations and thesis takes the stage, A culmination of years, a scholarly wage

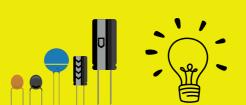
Farewell parties and nostalgic tears start to flow, Four years gone by, how time seems to blow.

The irony of endings, as they strive for new seas. Mastering equations day and night, Yet lost in a world of borrowed knowledge, Their creativity smothered, buried in college For as they bid adieu to their college days, The uncertainty of the future, in an ironic haze...

For in the irony lies the beauty of college life.

## ASHISH YADAV Second Year





# **BEST PROJECTS (2022-23)**

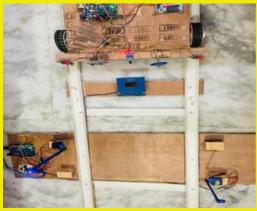
## PROJECT TITLE 1: AUTOMATIC PROTECTION SYSTEM AND RISK MITIGATION IN RAILWAYS USING PLC

#### **STUDENTS NAME:**

Deepak Singh, Waseem Ahmad Mir, Prince Kumar, Ritam Srivastav, Sarvesh Kumar

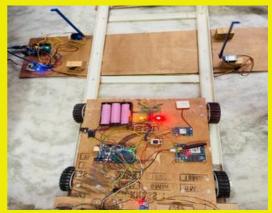
#### **ABSTRACT:**

One of the most inexpensive and energy-efficient modes of transportation is the railroad. In India, the railway network handles around 80% of all transit. An integral component of a tough and secure train operation is routine track inspection. The safe operation of rail transportation is seriously jeopardized by delays in investigations and problem discoveries. The custom of manually inspecting the rail track using a railway cart is ineffective and prone to biases and errors. Accident rates are rising due to negligent maintenance and careless manual handling, demonstrating the urgent necessity for an autonomous system. There is necessity of separate room for autonomous system improvement. About 60% of accidents occur on railroad tracks. The modern railway protection and control system is not fully automated, despite automation playing a significant role in almost all areas. The current rail network protection parameters include automatic gate control, track crack detection and protection from train collision.



Case 1: At Normal Condition Gate is opened





Case 2: Train detected by Sensor 1 and Gate is Closed



## PROJECT TITLE 2: SMART HYBRID ELECTRIC VEHICLE CHARGING STATION WITH AUTONOMOUS AUTHENTICATION STUDENTS NAME:

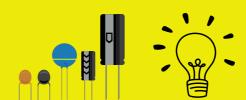
Harsh Kumar, Himanshu Jedia, Abhishek Singh, Pradyum Thakur

#### **ABSTRACT:**

IoT (Internet of Things) is an emerging technology as it allows the objects around us to communicate with each other via the Internet. In this paper an implementation of an IoT based electric vehicle charging station with autonomous authentication is proposed. Global warming throughout the world has led to the use of EVs. There are rapidly increasing EVCSs that cause a huge load on the grid supply. The given study addresses this issue by putting into place an implementation of an IoT based EV charging station (EVCS) which makes use of both grid and solar power. IoT based EVCS provides various features such as real-time battery status, payment authentication, energy management, etc. This is the reason why IOT based EV charging stations. But with the increase in technology, security threats like theft during payment in EVCS have risen. To counter this problem, payment authentication is required.







#### **PROJECT TITLE 3 :**

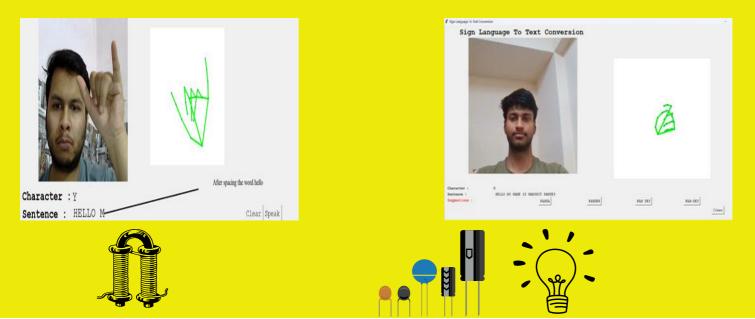
## MACHINE LEARNING BASED SIGN LANGUAGE RECOGNITION SYSTEM

#### **STUDENTS NAME:**

Md Amaan Ahmed, Harshit Pandey, Vaibhav Kumar Singh, Tushar Kumar

#### **ABSTRACT:**

This Project presents a sign language recognition system that uses computer vision and machine learning algorithms to translate sign language into written or spoken language. The system can recognize and analyze hand and body movements from video footage, and can associate them with corresponding words or phrases in the target language. The system is trained on large datasets of sign language videos, and can be customized to recognize different sign languages and dialects as well as it also convert text into speech. The paper also discusses the various technologies involved in implementing the system, including depth sensors, cameras, and microphones. The research paper presents the results of experiments conducted to evaluate the performance of the system, including its accuracy and speed of translation. The paper also explores applications of the system, including improving potential the communication between the deaf and hearing communities, and enabling deaf people to access a wider range of information and services. Overall, the research paper demonstrates the potential of sign language recognition systems to improve accessibility and inclusivity for the deaf and hard-ofhearing communities and highlights the importance of ongoing research and development in this area.



## **PROJECT TITLE 4:**

## **ARDUINO BASED SMART CART**

#### **STUDENTS NAME:**

Nikhil Gupta, Satya Vardhan Singh, Vipin Vishwakarma, Km Sonam Rajpoot

#### **ABSTACT:**

The project name "ARDUINO BASED SMART CART" implies that the method of changing and shopping experience has been enhanced. Comparatively speaking, the procedure requires less time than the standard billing method. It makes buying easier and more trustworthy. This programmed reduces the need for salespeople at the counter and develops an autonomous, human-guided shopping cart with a smart shopping system. Owners of supermarkets just need to buy the portable robot, which is then simple to set up underneath shopping carts. Customers can then enjoy shopping without having to push their own shopping carts. On this basis, we developed a user-friendly system that is quite useful in practice. It will efficiently complete the purchasing process while offering superior amenities. Overall, consumers benefit by using our system. It is cost-effective and time-saving. The Arduino hardware exhibits excellent accuracy while being safe. Because it manages both buying and billing, it minimizes human work.







NAME OF THE EVENT – BADMINTON TOURNAMENT. . ABOUT THE EVENT – A BADMINTON TOURNAMENT WAS ORGANIZED BY THE EESA CLUB (EE). NAME OF COORDINATOR - SHIRSHAK CHUAHAN NAME OF HEAD - SHASHWAT GUPTA ,ANKIT YADAV THE WINNERS OF THE BADMINTON TOURNAMENT ARE AS FOLLOWS:

BOYS –VAIBHAV AND NEVESH. GIRLS – MAHI SAHU.





NAME OF THE EVENT – SHAKE IT OFF. ABOUT THE EVENT – SHAKE IT OFF WAS ORGANIZED BY THE EESA CLUB (EE)IN THE D – BLOCK AUDITORIUM.. NAME OF THE COORDINATORS -MAHIMA TYAGI, POOJA ROUT NAME OF HEAD-AVANTIKA, ANJALI THE WINNER OF SHAKE IT OFF WAS - UJJAWAL SINGH



NAME OF THE EVENT – CHESS TOURNAMENT.

ABOUT THE EVENT - A CHESS TOURNAMENT WAS ORGANIZED BY THE EESA CLUB (EE) IN THE D – BLOCK ARENA.

NAME OF THE COORDINATOR -ANKIT SINGH,AMAN KUMAR , HEMANT KUMAR NAME OF HEAD- SHIVANGI SINGH

THE WINNERS OF THE CHESS TOURNAMENT WAS - PARTH SAXENA

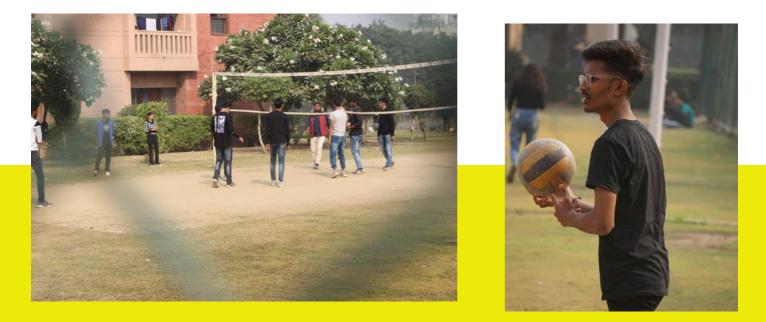


NAME OF THE EVENT – VOLLEYBALL. .

ABOUT THE EVENT - A VOLLEYBALL TOURNAMENT WAS ORGANIZED BY THE EESA CLUB (EE)) ON THE VOLLEYBALL COURT.

(PRIYANSHU, AKHAND PRATAP YADAV, ANIRUDDH RATHI, JAYANT SINGH, RITESH, ABHAY)

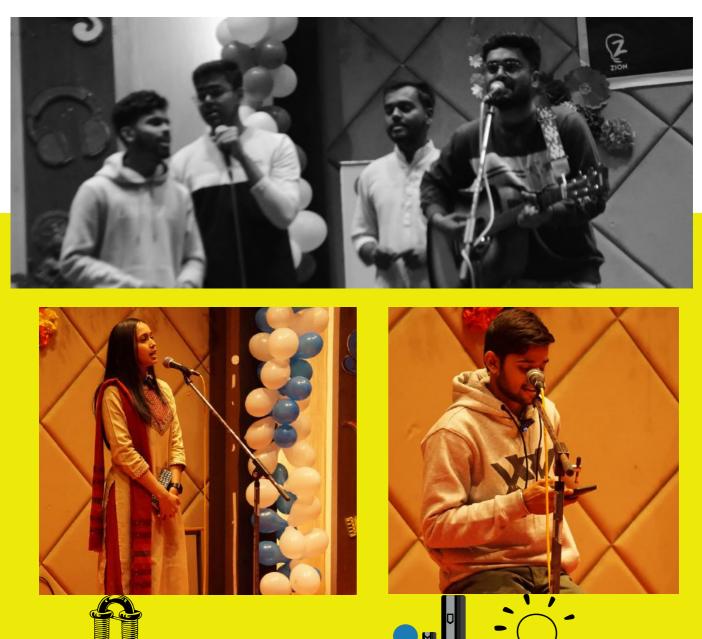
NAME OF COORDINATORS - J.





NAME OF THE EVENT - GCET IDOLS. ABOUT THE EVENT - A RAISE YOUR MIC (SINGING CONTEST) WAS ORGANIZED BY THE EESA CLUB (EE) AND IN THE C.D.E GROUND. COORDINATORS OF THE EVENT ARE -UTKARSH MISHRA, PRAKHAR PRAGYA. HEAD OF EVENT -SUYASH GUPTA, VIDIT SINGH, CHIRAG DIXIT.

THE WINNERS OF THE GCET IDOLS IS AS FOLLOWS-ARJUN



NAME OF THE EVENT - GCET IDOLS. ABOUT THE EVENT - A RAISE YOUR MIC (SINGING CONTEST) WAS ORGANIZED BY THE EESA CLUB (EE) IN THE D – BLOCK AUDITORIUM. HEAD OF EVENT - HIMANSHU SEKHAR, SHIVAM SINGH THE WINNERS OF THE GCET IDOLS IS ARE FOLLOWS-BOYS -AMAN SINGH BHUPENDRA SINGH QUISH RAY GIRL-SHIVANG PRIYANSHI DEVANSH



NAME OF EVENT -LAGAN 2.0

A SCAVENGER HUNT WAS ORGANIZED BY THE EESA CLUB (EE)). NAME OF COORDINATOR : -SHASHWAT CHAUDHARY, ASHISH YADAV, DEEPANSHU NAME OF HEAD: ARYAN PRASHAD , NISHIT SOLANKI, SAURABH TRIPATHI, YUVRAJ



# HACK-TECH

NAME OF EVENT -HACK-TECH A PITCHING EVENT A HACK-TECH A PITCHING EVENT WAS ORGANIZED BY THE EESA CLUB (EE)). NAME OF COORDINATOR -SHIRSHAK CHAUHAN, ASHISH YADAV JUDGES-DR.PINKI YADAV,ROHAN MAHTO AND VAIBHAV UJJWAL







# IETE INTERNATIONAL CONFERENCE

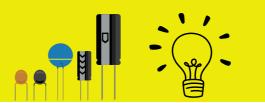
Name of Event:IETE International Conference on Cyber Threats and Security (IETE ICCTS 2023) 01-02 May, 2023 Date of Event:01-02.05.2023











# Student Achievements in CO-Curricular Extra-Curricular Activities

## 1. Shaswat Mishra

- EE-4th Year: 2022-23
- Accomplishments
- 1. Dr. Abdul Kalam sports fest, 2021-22 (Zonal level)
  - Secured- 2nd position
    - **Event-** Football
- 2. Dr. Abdul Kalam sports fest, 2022-23 (Zonal level)
- Secured -1st position Event - Football
- 3. Dr. Abdul Kalam sport fest,2022-23 (State level) Participation Event- Football
- 4.IMS Noida sports meet- Participation Event- Football
- 5. Participated in Gicsl Event- Football
- 6. Galgotias sports fest 2022 Secured -1st position Event- Football 7aside



2. Vaibhav Ujjawal EE-3rd Year: 2022-23

1. Gold in AKTU Zonal debate competition held at Greater Noida Institute of Technology, Greater Noida on 10 December, 2022.

2.State Level Debate Silver Medal at AKTU Lucknow 2023.





#### 3. Devansh Chaudhary EE-2nd Year:2022-23 1.Dr.Abdul Kalam Sport Fest ,2022-23



# **TOPPERS OF SESSION 2022-2023**

#### Second year Toppers



SHASHWAT CHAUDHARY









**Ayush Singh** 



Aditya Sagar



**Abhinav Tripathi** 



