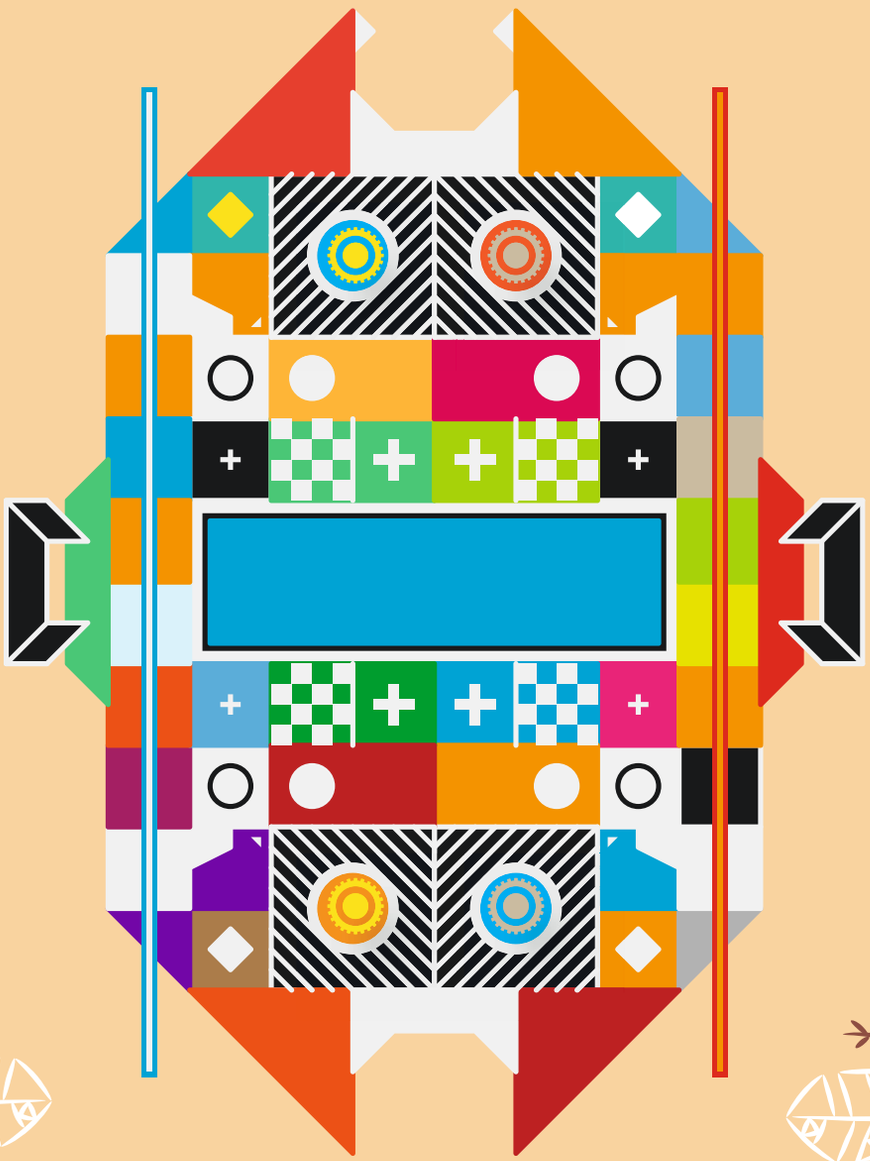
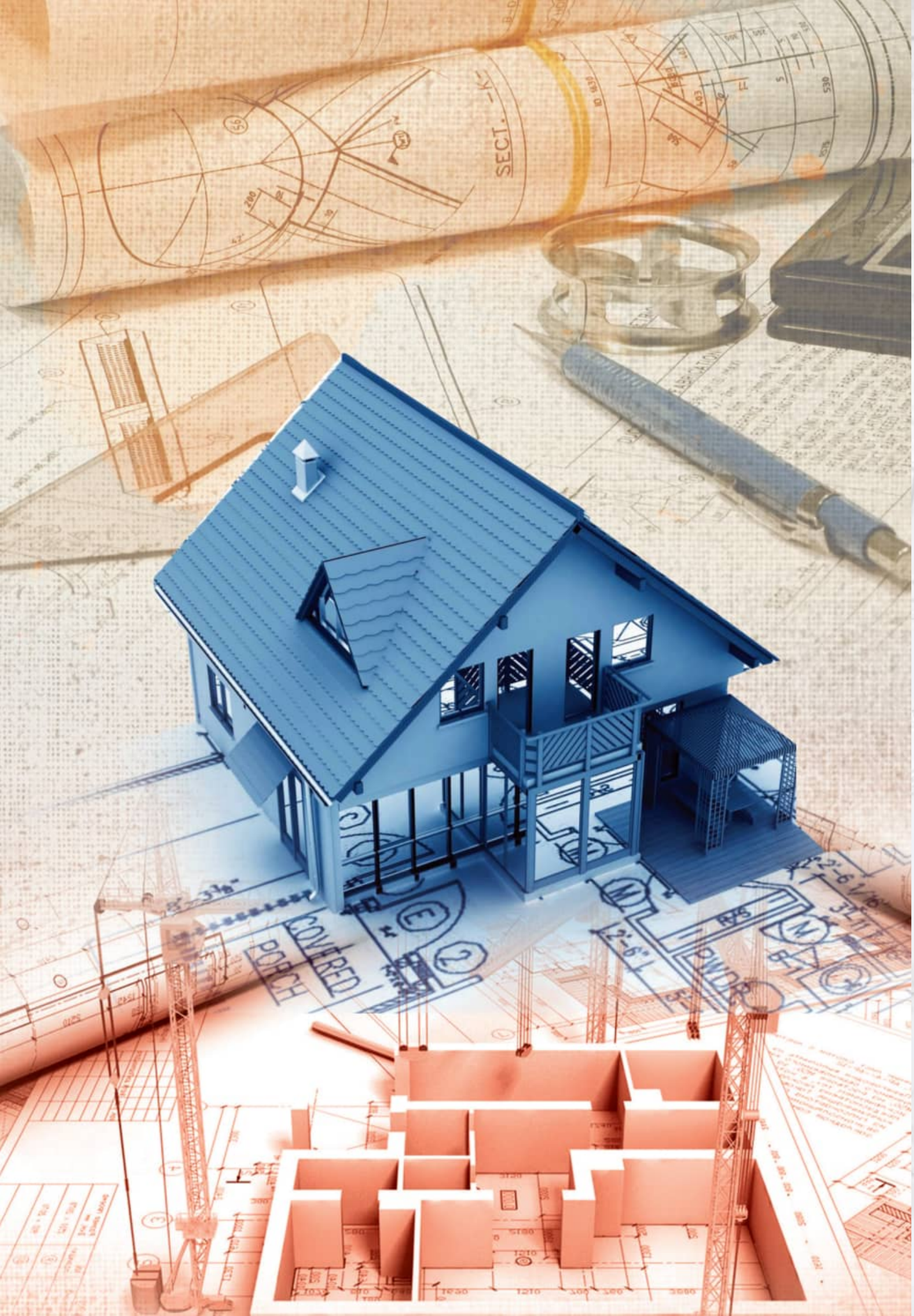
ETHNIC

Our Choice, Our Voice



HOOGHLY ENGINEERING & TECHNOLOGY COLLEGE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ETHNIC

ISSUE XIII

Hooghly Engineering & Technology College

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UNRAVELLING ETHNIC

Ethnic / Issue XIII / 2024

Published By

The Magazine Committee

Hooghly Engineering & Technology College

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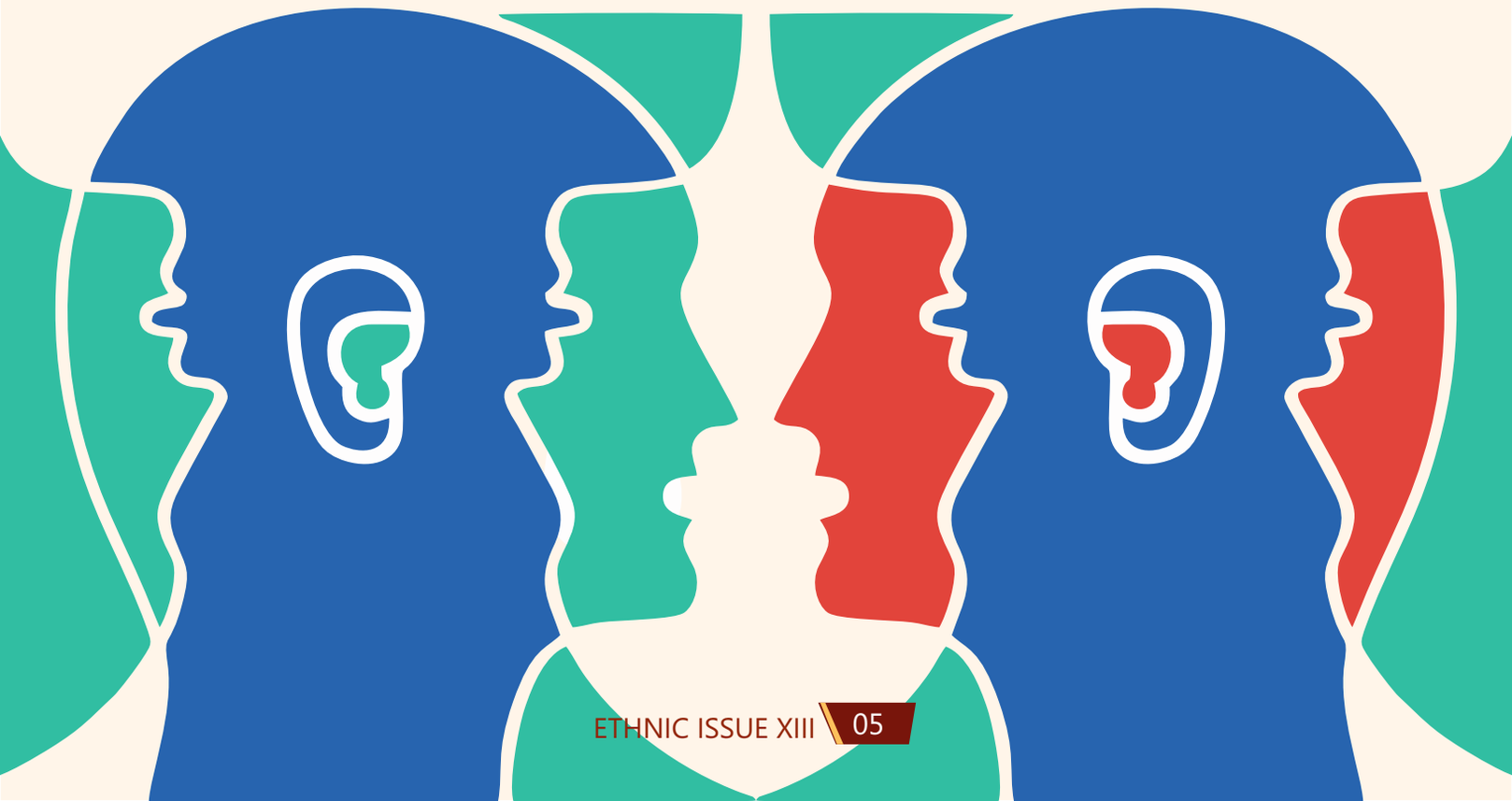
ETHNIC SPEAKS

We are glad to announce that after much hard work and dedication, the 13th issue of ETHNIC is finally ready for our readers to enjoy. Each year, a committed group of editors, artists, authors, photographers, and designers come together to meticulously create each page of the magazine, ensuring that it reflects the collective vision of the students at HETC in all its diverse forms. From thought-provoking essays on contemporary issues to the imaginative creations of budding poets and storytellers, every aspect of the magazine is curated with the aim of providing a platform for students to develop their writing and editing skills, as well to express their goals and struggles they face in their daily lives.

We are happy to make the announcement that this issue of the magazine is being published in offline mode, returning to our traditional format after being online for the past two years due to the COVID-19 pandemic. In this edition, you will find detailed reports on the various events that took place virtually and in-person between April 2022 and March 2024.

We invite you to delve into the pages of this magazine, to immerse yourself in the creative work of your peers, and to share your thoughts and feedback with us. Your opinions and advice are valuable to us, so please don't hesitate to reach out to us at ethnic@hetc.ac.in. We look forward to hearing from you and hope that you enjoy reading this issue of ETHNIC as much as we enjoyed creating it.



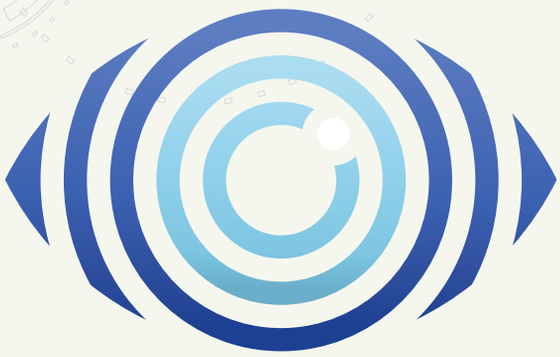
ACKNOWLEDGEMENT

The 13th issue of ETHNIC is a testament to the collective efforts and dedication of the entire HETC family. We are profoundly grateful to all the respected Advisors, Heads of Departments, In-Charges, and Coordinators for their invaluable guidance and unwavering support throughout this endeavour.

Our heartfelt appreciation goes to all the students, faculty, and staff members who have poured their creativity, skills, and hard work in the development of this magazine. Their contributions have enriched the content and quality of ETHNIC 2024, making it a true reflection of the vibrant and dynamic spirit of Hooghly Engineering & Technology College.

Without the collaborative spirit and the relentless efforts of every member involved, this achievement would not have been possible. We extend our sincerest thanks to everyone who played a part in bringing this magazine to life.

Thank you all for making ETHNIC 2024 a grand success.



Vision

To develop professionally competent and socially responsible human resources by imparting quality education in the field of engineering and technology.

Mission

To impart learner-centric and comprehensive education that fosters holistic growth and encourages application of acquired knowledge in different areas of professional and social functioning, research and entrepreneurship.

To create a dynamic and innovative teaching-learning process with focus on continuous up-graduation of teaching resource tools and technologies.

From PRESIDENT's Desk

Prof. (Dr.) Tarak Kumar Bandyopadhyay
President
Hooghly Engineering & Technology College,
Hooghly Engineering & Technology College Society

It is with great pleasure that I present to you the 13th issue of our college magazine, ETHNIC. This publication reflects the thoughts and creativity of our budding engineers and esteemed teaching fraternity.

In the recent years, there has been a significant paradigm shift in the field of technical education, driven by the advent of artificial intelligence and the development of technologies such as ChatGPT. This evolution has dramatically changed the requirements for technical manpower, necessitating new skills and knowledge.

Moreover, the pressing issue of global warming demands our urgent attention. Future engineers and scientists must work diligently to mitigate the effects of natural calamities and ensure the safety of our planet. Their efforts in sustainable development will be crucial in safeguarding the earth for future generations.

The introduction of electric vehicles (EVs) and the shift from fossil fuels to renewable energy sources have opened up exciting new employment opportunities for engineers. This transition not only addresses environmental concerns but also drives innovation and technological advancement.

In this issue of ETHNIC, we feature a diverse array of articles and poetry that we hope will inspire and engage all our readers. The contributions from our students and faculty members highlight the dynamic and forward-thinking spirit of our college community.

I believe you will find this edition both enjoyable and thought-provoking.

From PRINCIPAL's Desk

Dr. Smitadhi Ganguly
Principal in-Charge
Hooghly Engineering & Technology College

ETHNIC, the annual magazine of Hooghly Engineering & Technology College, is a vital organ of the college and a coveted vehicle of expression for all the stakeholders of the college. During the COVID-19 pandemic we were forced to sacrifice the much anticipated traditional hard copy of ETHNIC and embrace the digital edition instead. I am glad that after a couple of digital editions, ETHNIC is printed again as the quintessential hard copy magazine. I hope that this hard copy edition will attract the attention of all students, teachers and nonteaching staff members of HETC just as before.

The dark chapter of the ravaging pandemic has been closed a year ago and it is really refreshing to be back again in our old self. But the pandemic has also introduced some new concepts like digital-learning, work-from-home, online-tests which have become a part of our life and will remain with us in the days to come. In this post pandemic era when we again enjoy the old ways, let us also strive to embrace and assimilate the new concepts to remain relevant in the future.

Technology is evolving very rapidly and making unforeseen changes in our behaviour and social patterns. Many old avenues are closing down and many new avenues are being created. New branches of studies are opening up. To keep pace with this fast changing scenario the college should also adapt and change itself and introduce new concepts to remain relevant. We must take up this challenge for our survival.

Ethnic has always been the foremost platform for the students of HETC as also the teaching and non-teaching staff members to express their thoughts, emotions and opinions and also to reinvent themselves in other activities. Our University along with AICTE emphasize on the multi-directional skills and involvement of students and Ethnic, as one of the several existing opportunities in the college, provides the scope to fulfil these requirements.

We strive to engage our students in different kinds of co-curricular and extra-curricular activities in the college besides academics. This effort manifests itself in the literary and cultural output of our students as evidenced in the issues of ETHNIC.

I wish the Ethnic 2024 a grand success and at the same time congratulate all the members of the Magazine Committee for their painstaking effort and dedication throughout the year that really bring ETHNIC to all the stakeholders in such a pretty form.

From HOD's Desk

Prof. (Dr.) Avijit Maity
HOD, Department of Electrical Engineering
Hooghly Engineering & Technology College,
Secretary, Hooghly Engineering & Technology College Society

Hooghly Engineering & Technology College (HETC) is a self-financed B.Tech college established in 2004 and sponsored by the Hooghly Engineering & Technology College Society (HETCS), a non-profit organization. To proceed towards a digital India, the country needs a huge number of youths with broad knowledge of versatile modern technologies. To fulfill the demand for competent technologists, Hooghly Engineering & Technology College has been developing human resources for society since its inception.

Electrical Engineering is one of the core and ancient branches of engineering and is the mother of many other engineering branches. We cannot even imagine staying a week without using electrical power in any form. So, electrical engineers always play a very effective role in society as well as in the advancement of civilization and modernization. Students from the Electrical Engineering department of our college have established their futures, serving Indian and State Governments as well as various MNCs. Some are working on other continents, while others are exploring their brainpower in research fields and at many eminent academic institutions.

Nurturing creativity and inspiring innovation are two of the key elements of a successful education. Not only that, HETC always admires the extracurricular activities of students, aiming to create well-rounded individuals. A college magazine is the perfect amalgamation of both. It harnesses the creative energies of the academic community and distills the essence of their inspired imagination in the most brilliant way possible. Hooghly Engineering & Technology College continuously strives to practice self-improvement.

The essential purpose of a college magazine is to inform, engage, inspire, and entertain a diverse readership including alumni, parents, students, faculty, staff, and well-wishers of the college by sharing success stories that present a compelling, timely, and honest portrait of the college and its extended family. This magazine has made an earnest attempt in this direction and has brought out certain aspects of the college to the eyes of the public so that they may understand and know the college even better.

I am sure the college will scale even greater heights in the years to come and serve many more millions in society. Hence, I am delighted to know that the magazine committee of our college is bringing out the 13th issue of Ethnic, a trilingual magazine consisting of various technical and non-technical articles from students, faculty members, technical staff, and non-teaching staff of this institute. It is my immense pleasure to have this opportunity to congratulate the Magazine Committee for bringing out this magazine again in hard copy format, which in itself is an achievement considering the effort and time required. May all our students soar high in uncharted skies and bring glory to the world and their profession with the wings of education. I convey my cordial thanks to all the members of the Magazine Committee for their relentless efforts in making this issue a grand success in all respects.

Vision and Mission of Electrical Engineering Department

Vision

• To create a strong teaching and research environment by producing excellent electrical engineers.

• To attain excellence as an electrical engineer so as to prove themselves as outstanding professionals with full expertise and knowledge on the electrical engineering so that they serve as a valuable resource for industry and society at large, maintaining all humane moral and ethical values.

• To emerge as an academic institution, dedicated to the creation environment to develop confidence, motivate talent, encourage progressive and analytical thinking, nurture creativity, promote research and development, innovation and industry-institution collaboration and enhance professional competence of students.

Mission

• To impart high quality educational program on electrical engineering so as to prepare students as successful professional expert and also to bring ability to pursue higher education.

From HOD's Desk

Prof. (Dr.) Biswajit Halder
HOD, Department of Computer Science and Engineering
Hooghly Engineering & Technology College

I feel extremely happy to know that the annual college magazine ETHNIC, which is going to be published.

Here, I would like to mention that our Department of Computer Science and Engineering is committed to working hard toward developing engineers with a rich blend of technical, managerial, and social skills, contributing to nation-building. The department came into existence in 2004 with an intake of 60, and at present, it has an intake of 120. Currently, the department places emphasis on all the important aspects of computers, such as high-speed networks, algorithm design, network security, advanced database systems, artificial intelligence, data science, the theory of computation, and many more. The department is dedicated to ensuring great careers for its students so that they can confidently face the competition and present challenges in the corporate world.

I believe that this magazine will help to acquire knowledge and skills, build character, and enhance the employability of our young, talented students to become more competent. Here, I congratulate all the contributors and the editorial team for bringing out such an outstanding magazine.

Vision and Mission of Computer Science and Engineering Department

Vision

• Attainment of excellence as a computer engineer so as to prove themselves as outstanding professional with complete expertise and knowledge in Computer Science and Engineering and its applications so that they may prove a valuable resource for industry and society at large, maintaining all moral and ethical values.

Mission

• To excel in professional carrier and higher education by accruing applied knowledge in Mathematics, Computation, Basic Principles of Science Engineering with capable communication.

• To create a strong teaching and research environment through excellent Computer Science and Engineering education.

• To analyze real life problems and projects in developing economically feasible and socially acceptable solutions.

From HOD's Desk

Dr. Ankan Bhattacharya

HOD, Department of Electronics and Communications Engineering

Hooghly Engineering & Technology College

Welcome to the Department of Electronics and Communications Engineering (ECE) at Hooghly Engineering & Technology College, Hooghly, West Bengal. The B.Tech Program in ECE is designed to guide the students in achieving technical competency, effective communication, leadership skills and suitably utilize them while working in projects, multi-disciplinary teams, and society. To meet these goals, the ECE program strongly integrates with the core of discovery and emphasizes holistic student development in accord with the Institute's Vision and Mission.

The department has experienced and dedicated faculty and technical assistants, qualified from reputed universities/institutes. The Laboratories with all experimental setup as per syllabus are available. The students' performance in university exams is satisfactory. The placement record of the students is satisfactory both in Core and IT domains. Departmental students are engaged in some Live Projects as well. The students are encouraged and suitably guided to publish their project work in conferences and journals.

The department's goal is to educate and prepare our students in applying engineering concepts, methods, and systems to improve the world. To do this, significant efforts have been made to set up top-notch labs equipped with the necessary hardware and simulation software in the fields of electronics, communication, microwave, digital signal processing, microprocessors, and VLSI design. The students here receive exposure to the fundamentals of Electronics and Communication Engineering. In addition to the usual curriculum, students are encouraged to take part in internal and external activities like seminars, conferences, and various other events. Focus is given to make the students research-centric. The final year students of the department are offered a course on "Entrepreneurship", which is the process of turning a concept into a developed product or service thereby creating new job opportunities.

On a final note, I convey my sincere gratitude to the members of the College Magazine Committee for their endeavours and wish a grand success of this edition of 'ETHNIC'.

Vision and Mission of Electronics and Communications Engineering Department

Vision

• To provide the students excellent education in research environment for developing them into high class electronics engineers who would be strong in fundamentals, multi-disciplinary in approach, industry-ready, equipped with analytical, design, managerial and entrepreneurial aptitude, who would be much sought-after by any industry, and at the same time, excel in pursuance of higher studies, blossom into extra-ordinary entrepreneurs.

Mission

• Training the students to become disciplined and also knowledgeable in the field of Electronics and Communication Engineering (ECE) by providing quality education.

• To produce prolific graduates with remarkable skill in envisaging, designing and effectively giving solutions for global needs in the field of Electronics and Communication.

• To be highly competent in various fields of Electronics and Communication Engineering through the best breed laboratory facilities acceptable solutions.

From HOD's Desk

Dr. Smitadhi Ganguly
HOD, Department of Mechanical Engineering
Hooghly Engineering & Technology College

It is heartening to know that ETHNIC, the college magazine, is going to be published in hard copy again after a couple of digital editions. A printed copy has a singular essence that cannot be recreated otherwise. The magazine is an essential organ of the college and ETHNIC has been consistently offering the scope to the students and staff members to express themselves and nurture their talents right from the inception of the college.

Mechanical Engineering, one of the oldest and foremost traditional engineering disciplines, was started in our college in 2010 with a goal to be recognized as an excellent centre of knowledge, research and holistic growth in the realm of engineering education. This field has continually evolved to incorporate advancements in technology, and mechanical engineers today are pursuing developments in such fields as composites, mechatronics, nanotechnology and machine learning. We have well equipped and well maintained labs with modern facilities, a group of dedicated faculty members and a band of competent technical hands.

My sincere compliments to the entire team of the Magazine Committee for their persistence and perseverance in bringing out this printed issue of ETHNIC after a gap of more than three years. I wish the current issue a grand success and hope that this hard copy edition will be able to win the attention and admiration of the students, staff members and other stakeholders of the college as before. May the magazine prosper further and reach new heights in terms of creativity and content.

Vision and Mission of Mechanical Engineering Department

Vision

• The department strives to be recognized as a centre of excellence by providing excellent Mechanical Engineering education to build strong teaching and research environment.

Mission

• To excel in professional career and higher education by acquiring competent knowledge in Mathematics, Computation, basic principles of Engineering and capable communication.

• To create a strong teaching and research environment through excellent Mechanical Engineering education.

• To make capable to analyze real life problems and related projects in developing economically feasible and socially acceptable solutions of Mechanical Engineering problems.

• To excel in professionalism through smart and ethical conduct, interpersonal skills and adaptability in communicating prevalent trends in technologies as well as changing technologies.

• To make capable to analyze real life problems and related projects in developing economically feasible and socially acceptable solutions of Mechanical Engineering problems.

• To excel in professionalism through smart and ethical conduct, interpersonal skills and adaptability in communicating prevalent trends in technologies as well as changing technologies.

From HOD's Desk

Dr. Tanumoy Ghosh
HOD, Department of Civil Engineering
Hooghly Engineering & Technology College

I am pleased to learn that Hooghly Engineering & Technology College is bringing out the annual issue of the ETHNIC, a magazine comprising all types of articles from students and members of the college. Needless to say that the students' contribution is much more substantial as their creativity and critical thinking can be greatly encouraged through this magazines.

Civil Engineering is the oldest traditional discipline that provides excellent opportunity to build and change the face of the world. Civil Engineering has contributed largely to build new independent India having one of the largest road and rail network, bridges, tunnels, industrial and high-rise buildings, multipurpose river valley projects and developing irrigation, sanitation and water supply projects.

Recognizing the increasing market demand of the discipline in a developing country like India, the Civil Engineering department instituted its journey from the establishment of the college in 2004. Since the inception, the department has been effetively initiating new expertise and developing efficient civil engineers adding to diverse domains of the society. The students are taken thoroughly through various civil engineering courses, both theoretical and practical, so that they become competent, and capable to accept new challenges in the ever-growing civil engineering domain. The students are highly motivated in writing technical articles, develop innovative technical models and present them in competitions, parti cipate in internships, workshops, and seminars that are cardinal for upgrading practical knowledge.

The achievements of the students of Civil Engineering Department of Hooghly Engineering & Technology College are also remarkable. Some of our students became University topper while many of them has secured rank in GATE to do further studies in reputed institutions like JU, IIEST, NITs, IITs. Some of them even became faculty members in different NITs, IIT Indore and IIEST. Many of our students got placed in reputed core companies like L&T limited, Tata Projects, ITD Cementation, Kalpataru Projects, GDCL, Ramky Infrastructure, Pinnacle Infotech and many more from campus recruitment drive conducted by the College.

I wish grand success for the students of the college and for the healthy growth of the magazine ETHNIC.

Vision and Mission of Civil Engineering Department

Vision

• The vision of the department is to create competent civil engineers who will contribute creatively in both public and private sectors, serve community, pursue higher studies and take up the challenges of cutting-edge technologies.

Mission

• To impart student-centric innovative education in research-conducive environment.

• To transform the students into world class civil engineers.

• To ensure that the graduates are employable, good entrepreneurs and competent scholars.

• To enable the students to be creative designers bringing excellence in the areas of construction technologies.

• To empower the students for global infrastructural development, maintaining sustainable environment and improving quality of life.

From HOD's Desk

Dr. Rajesh Patra
HOD, Department of Basic Science and Humanities
Hooghly Engineering & Technology College

I am glad to know that Hooghly Engineering & Technology College is publishing the 13th issue of its annual edition of the magazine "ETHNIC". The magazine is a small yet very significant platform for our students, as it enables them to apprehend and fire up their creative potential, and who knows, they might become tomorrow's greats in the sphere of creative writing.

On this platform, I want to make an appeal to our beloved students. Dear students, set your goals high. Dream, aspire, commit and reach new heights; script new chapter of success. If you do so, the world will be yours. I am confident that you will continue to seize opportunities and bring laurels to yourselves and to the college.

I take this opportunity to congratulate all staff and students involved in bringing out this magazine as per schedule. I wish a bright future and success to all.

I wish grand success for the students of the college and for the healthy growth of the magazine ETHNIC.

From Deputy Registrar's Desk

Mrs. Sreyasi Rupa De

Deputy Registrar, Hooghly Engineering & Technology College

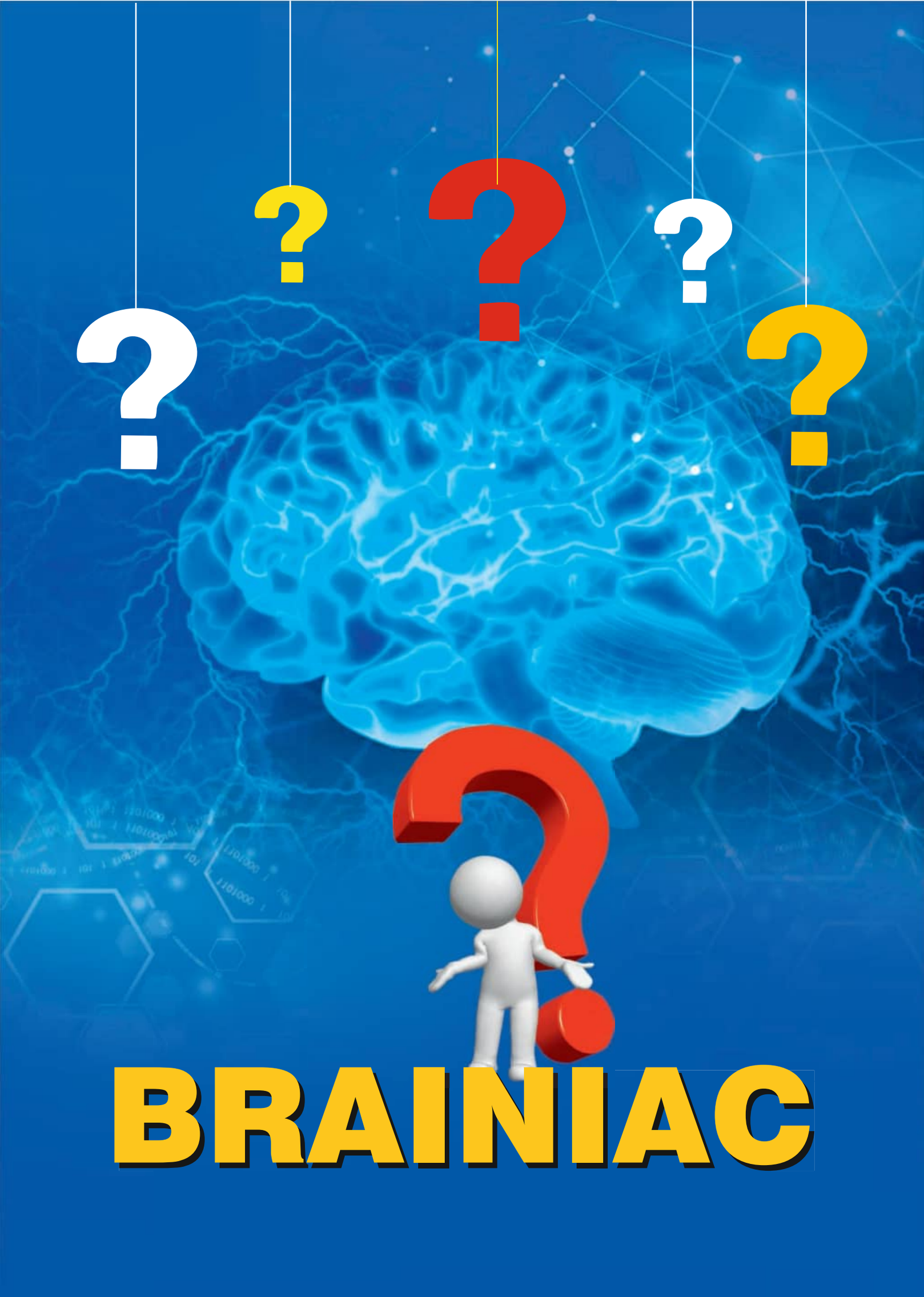
Convener, HETCS Skill Development Centre

I welcome you all to our great institution of undergraduate degree engineering higher education and assure you of a nurturing and caring environment that will see all of you blossom into empowered and sensitive human beings. Education is the manifestation of perfection. It drives away ignorance, and through illumination, it emboldens a human to righteous thought and action. It energizes society and enables a human to earn his living with respect and praise. In order to accomplish our vision and mission, we are prepared to take as much effort as possible for the betterment of the academic scenario in our institution. We believe that "Education is the most powerful weapon which you can use to change the world".

I take immense pleasure in conveying my heartfelt congratulations to all the students, stakeholders, and the editorial team of ETHNIC 2024 and appreciate the efforts of the team in compiling and unleashing the hidden potential of the students in making this magazine very purposeful and meaningful.

"ETHNIC" means the cultural heritage of wisdom, knowledge, and intelligence. Through this magazine the aspirations of young minds can portray their thoughts, ideas, dreams, creative writings, and aspirations in a very beautiful manner.

Once again I wish the team all the very best in all your endeavors and may you explore new dimensions in the process of teaching and learning and in turn these learnings should benefit the stakeholders and society at large. Let's all join hands in grooming the young minds and contribute to "developing human resources" for the nation.


BRAINIAC

CIVIL ENGINEERING (CE)

1. In chain surveying tie lines are primarily provided

(A) to check the accuracy of the survey (B) to take offsets for detail survey

(C) to avoid long offsets from chain lines (D) to increase the number of chain lines.

2. In a mortar, the binding material is

(A) cement (B) sand (C) surkhi (D) cinder.

3. Sand stone is

(A) sedimentary rock (B) metamorphic rock (C) igneous rock (D) volcanic rock.

4. The minimum recommended diameter of sewers, is

(A) 5 cm (B) 10 cm (C) 15 cm (D) 20 cm.

5. For the survival of fish in a river stream, the minimum dissolved oxygen is prescribed

(A) 3 ppm (B) 4 ppm (C) 5 ppm (D) 10 ppm.

6. Biochemical Oxygen Demand (B.O.D.) of safe drinking water must be

(A) nil (B) 5 (C) 10 (D) 15 (E) 20

7. Aeration of water is done to remove

(A) Dissolved gases (B) colour (C) bacteria (D) hardness (E) turbidity.

8. B.O.D. of treated water should be

(A) 10 ppm (B) 25 ppm (C) 20 ppm (D) 30 ppm (E) Nil.

9. Under-reamed piles are generally

(A) driven piles (B) bored piles (C) precast piles (D) all the above.

10. The 9 cm x 9 cm side of a brick as seen in the wall face, is generally known as

(A) stretcher (B) face (C) front (D) header (E) side.

COMPUTER SCIENCE AND ENGINEERING (CSE)

1. Which data structure is typically used to implement priority queues efficiently?

(A) Array (B) Stack (C) Linked List (D) Binary Heap

2. Which of the following is not a property of a Red-Black Tree?

(A) Every node is either red or black

(B) The root and leaves are black

(C) No two red nodes can be adjacent

(D) The depth of a node is at most log(n), where n is the number of nodes

3. What is the main advantage of using Dijkstra's algorithm over the Bellman-Ford algorithm for finding single-source shortest paths?

(A) Dijkstra's algorithm works only for graphs with positive edge weights

(B) Dijkstra's algorithm has a faster time complexity

(C) Dijkstra's algorithm guarantees the shortest paths in graphs with negative edge weights

(D) Dijkstra's algorithm can handle graphs with cycles

4. Which of the following is NOT a type of normalization in database design?

(A) 1NF (First Normal Form)

(B) 2NF (Second Normal Form)

(C) 3NF (Third Normal Form)

(D) 4NF (Fourth Normal Form)

5. Which sorting algorithm has the best average-case time complexity?

(A) Merge Sort (B) Quick Sort (C) Heap Sort (D) Bubble Sort

6. What is the output of the following C code snippet?

```
#include <stdio.h>
int main() {
 int x = 5;
 int y = 10;
 int *ptr1 = &x;
 int *ptr2 = &y;
 printf("%d", *ptr1 * *ptr2);
 return 0;
}
```

(A) 50 (B) 15 (C) 10 (D) 5

7. Which of the following is NOT a type of SQL join?

(A) INNER JOIN (B) OUTER JOIN (C) CROSS JOIN (D) SUB JOIN

8. What is the time complexity of the best-case scenario for the Quick Sort algorithm?

(A) O(n) (B) O(n log n) (C) O(n^2) (D) O(log n)

9. Which of the following is not a key principle of object-oriented programming?

(A) Encapsulation (B) Polymorphism (C) Abstraction (D) Recursion

10. Which of the following data structures is typically used to implement LRU (Least Recently Used) caching?

(A) Queue (B) Stack (C) Hash Table (D) Binary Search Tree

ELECTRONICS AND COMMUNICATIONS ENGINEERING (ECE)

1. Name an electronic device with four terminals.
(A) JFET (B) BJT (C) MOSFET (D) Opto-coupler

2. Who is the father of RADAR technology?

(A) E. H. Synge (B) Robert Watson-Watt (C) Reginald Fessenden (D) Theodore Maiman

3. Name a terahertz device.

(A) Gunn diode (B) IMPATT diode (C) PIN diode (D) Tunnel diode

4. Who is the inventor of Bluetooth technology?

(A) William Herschel (B) Victor Schumann (C) Jaap Haartsen (D) Hans Berger

5. Which generation of computers use Integrated circuits (ICs)?

(A) Fourth generation (B) Third generation (C) Second generation (D) First generation

6. Who is known as the "father of information technology"?

(A) Claude Elwood Shannon (B) Carl Friedrich Gauss (C) Heinrich Hertz (D) Joseph Fourier

7. Which modulation technique is used in TV transmission?

(A) Double Sideband Full Carrier(DSB) Modulation (B) Double Sideband Suppress Carrier(DSB-SC) Modulation (C) Single Sideband (SSB) Modulation (D) Vestigial Sideband (VSB) Modulation

8. Who won the Nobel prize for "contributions to the development of wireless telegraphy" along with Marconi?

(A) Karl Ferdinand Braun (B) Wilhelm Wien (C) W.H. Bragg (D) Dr. Max Planck

9. Which country launched 5G first?

(A) India (B) China (C) South Korea (D) United States

10. Who made the first optical fiber?

(A) Narinder Singh Kapany (B) Charles Kuen Kao (C) John Tyndall (D) Manfred Börner

ELECTRICAL ENGINEERING (EE)

1. Which is wrong statement for active element?

(A) The elements that supply energy (B) Ability to control the flow of charge

(C) Used for energy storage and discharge (D) Used for current and voltage control

2. When three identical bulbs of 60W, 200 volt rating are connected in series to a 200V supply, the power drawn by them will be

(A) 180 watt (B) 10 watt (C) 20 watt (D) 60 watt

3. Ampere-hour is a unit of

(A) Quantity of electricity (B) Strength of current (C) Power (D) Energy

4. For domestic wiring purposes, how are circuits connected?

(A) Straight (B) Parallel (C) Serial (D) Series

5. Which is not defining the unit of electric current?

(A) Coulomb/sec (B) Farad-coulomb/sec (C) Volt/ohm (D) Ampere

6. What percentage of the current carrying capacity of aluminium is that of copper?

(A) 15% (B) 30% (C) 75% (D) 25%

7. The power factor of a D.C. circuit is always

(A) Leading (B) Unity (C) Lagging (D) Zero

8. Sine wave RMS is

(A) Peak voltage/square root of 5 (B) Peak voltage/square root of 2

(C) Peak voltage/square root of 6 (D) Peak voltage/square root of 3

9. Resistance of a copper wire is R. Now, the length is made twice keeping the cross sectional area same. Four such wires are connected in parallel. The net resistance is

(A) R (B) R/2 (C) R/4 (D) R/8

10. The unit of resistivity is

(A) Ohm (B) Ohm meter (C) Ohm/meter (D) Meter

MECHANICAL ENGINEERING (ME)

1. Interference of gear occurs in

(A) Involute profile (B) Cycloidal profile (C) Both (a) and (b) (D) None of these

2. Peaucellier's mechanism has

(A) Sliding pairs (B) Turning pairs (C) Spherical pair (D) None of these

3. Diaphragm pressure gauge is used to measure

(A) High pressure of gas only (B) High pressure of liquid only

(C) Low pressure of any fluid (D) None of these

4. When the depth of flow is critical, specific energy of water is

(A) Minimum (B) Maximum (C) Average (D) none of these

5. In centrifugal pump, shrouds are related to

(A) Impeller (B) Foot valve (C) Delivery Pipe (D) Suction pipe

6. A draft tube has no hydraulic function in

(A) Francis turbine (B) Pelton wheel (C) Kaplan turbine (D) Propeller turbine

7. Piezometer cannot be used to measure

(A) Pressure of liquid (B) Pressure of a gas (C) Negative pressure (D) Both (a) and (b)

8. The total strain energy stored in a body is known as

(A) Impact energy (B) Resilience (C) Proof resilience (D) modulus of resilience

9. The stress at the neck of a mild steel specimen is called

(A) Ultimate stress (B) Working stress (C) Breaking stress (D) Yield stress

10. In linear motion, the rotational analogue of force is

(A) Torque (B) Couple (C) Moment of inertia (D) none of these

WE & THE WORLD

Facebook: Is it for students?

Snigdha Ghoshal, Civil Engineering, 3rd Year

facebook accounts are now a days very common among all sections of society. We know that the students are the cross-section of society and they are now directly involved with Face book. It is a well-known social platform to stay connected and collaborate with peer members. By following professional groups, pages and interacting with people who share similar interests, a student can learn more about their field and explore career opportunities.

But !! is it really helpful for students?

As a student, they want to "stay connected," but the question is "with whom?" ~Teachers?!

The teacher-student relationship should be friendly, but they should not be friends.

It wouldn't be appropriate for a student to know about how his/her teacher celebrates their 31st night or any personal life matters, as well as for a teacher to comment on a student's meme post. When we break down the formal barrier between teacher and student, their relationship does not reach the purity that it should. So,it's better to keep the barrier.

If a student uses it with their own special balance, then Facebook may help in studies.

We definitely can gain more knowledge from books. A good book can keep our mind calm, and we can focus more on our activities. For a student, reading storybooks is much better entertainment than scrolling through Facebook.

Facebook is really a good social networking platform, but not for students. It isn't meant for education. Anyone can claim expertise in any field without any verification.

It's a platform for self-promotion, not objective research.

It is not for students at all!!

Teenagers and Modern Society

Sakshar Das, Computer Science and Engineering, 2nd Year

This article is dedicated to teenagers.

As I begin, I must mention that teenagers are a valuable part of society. They have a lot of potential as future adults and members of the next generation of society. Keeping this in mind, I should not miss that society looks at them as a glimmer of hope, to correct all the flaws and shortcomings and eventually rectify them with modern and efficient methods and techniques. This stands true and good for a category of teens, however.

The reason why this is not universal is because of the predators already existing in society. These predators influence the teenage youth in a manner that makes it increasingly difficult for them to understand and eventually escape. Their main task is to lure the youth towards achieving or owning something which apparently seems great, but in reality, it's not. Teenage minds, not fully matured, are unable to understand the shortcomings of such acts, and as a direct consequence, fall prey to them even without realizing. The time of realization usually varies from individual to individual, but by the time the brain comes to know, it's usually late enough to not prevent any damage or restore normalcy.

It feels sad to know that there has been an alarming rise in suicide rates among teenage men and women. The causes of such events are mostly depression problems based on relationships, loneliness, or a complex that is either based on superiority or inferiority. The high expectations of guardians in every walk of life are another significant cause of such mishaps. Peer pressure is something we all should be highly conscious of. It refers to persuading someone to do or practice something that the other person is already doing. Failing to do so usually develops a sense of "getting isolated" or being looked at with disdain. To prevent such occurrences, many individuals resort to harmful and disastrous habits and addictions in the name of "peer pressure." Many of these habits have a long-term impact on the physical and mental health of the individual. It not only becomes difficult to come out of them, but also becomes difficult to accept a life without them. Trying to identify such habits at an early stage should be taught to students. Special focus should be made on killing such habits and reconfiguring thought patterns through proper education.

Another point, as philosophers have once said, "Love is in the air." It is debatable to some extent. Love without feelings and just for the sake of money and fame is not love; it's just a contract. The people who try to manipulate others by trying to force love are no less than offenders. Society should identify them and avoid them as much as possible. Society has to ensure that there is no suicide victim due to love. This can be done by normalizing the understanding of love through proper education. The fact that it's just a flow of hormones and nothing else should be introduced to the people at large.

Overall, teenagers are the backbone of society. It is the duty of mature citizens to preserve their backbone at any cost.

"Degrees and Dimensions: The Multifaceted Lives of College Students."

Ahana Bagchi, Computer Science and Engineering, 1st Year

"It's our choices, Harry, that show what we truly are, far more than our abilities." — ALBUS DUMBLEDORE. Once said in my best-loved series, HARRY POTTER. Nestled within the venerable halls of academia, college life unveils itself as an intricate and symphonic composition, where each student is a unique instrument contributing to the grand orchestration of intellectual pursuit, social intricacies, personal metamorphosis, and the challenges that forge resilience. Beyond the façade of lecture halls, this essay endeavours to unravel the opulent layers of the multifaceted life that college students lead—a life of parallel journeys intersecting to craft an unparalleled symphony of growth and maturation.

"The only way to do great work is to love what you do." — STEVE JOBS. The pursuit of knowledge is not merely a scholarly endeavour but a quest for profundity, a dance with ideas that challenges preconceptions, fosters critical thinking, and compels a perpetual thirst for erudition. Subjects and disciplines become brushstrokes, painting a canvas of intellectual curiosity and academic excellence provided by willingness and love towards the subject.

"Happiness can be found even in the darkest of times if one only remembers to turn on the light." — ALBUS DUMBLEDORE, HARRY POTTER. Friendships, ephemeral yet enduring, are the allegro of camaraderie; professional connections, the adagio of future collaborations. The vibrancy of campus life, punctuated by social activities and events, orchestrates a harmonious interplay of personalities, enriching the collective human experience, which is something we live for and dream of becoming—something our hearts desire... someday.

"We've all got both light and dark inside us. What matters is the part we choose to act on. That's who we really are." — SIRIUS BLACK, HARRY POTTER. College students embark on an odyssey of self-discovery—an epic poem unfolding with each introspective stanza in this stage of life. Away from the comforting cadence of familial influence, students navigate the symphonic complexities of independence, experiencing the crescendo of successes and the sotto voce of setbacks. The multifaceted dimensions of personal growth unveil the chiaroscuro of identity, a masterpiece painted by the strokes of resilience, introspection, and evolving self-awareness, all guided by the care of our professors.

"Our lives are defined by opportunities, even the ones we miss." — [THE CURIOUS CASE OF BENJAMIN BUTTON]. I think this quote dictates the balancing act of academic rigor with social commitments, the relentless ticking of time, and the dissonant chords of uncertainty, all composing the crucible of adversity. Yet, it is within this crucible that students forge the mettle of their character, finding harmony in resilience and melody in overcoming life's cacophonous moments, which I believe everyone will agree with.

On a final note, I would like to remind myself and everyone that, "Ends are not bad things; they just mean that something else is about to begin." — GREY'S ANATOMY; a symphony echoing with the profound beauty of intellectual pursuits, intricate social dynamics, transformative personal growth, and the resilience born of overcoming challenges. College life, in its most elegant form, is a sonnet that transcends the ordinary and encapsulates the extraordinary journey of becoming.


WINGS
OF POESY

THE REBEL FOR FREEDOM

When someone tries to snatch our rights,
We need to fight.
Against all the evils and sins,
We need to play this rhyme.
History guides us,
Freedom is our fundamental right.

Innumerable sparking stars
Give sperm to the light.
Discovering all the hidden curses
We should get rigid in our lives.

Our silence doesn't mean
To cover your mistakes.
Persecution and Repression
Can't make us silent.
We can condemn
Whenever we are aware.

No revolution takes place
Without any concrete base.
If there is any case
We should make a gaze.

Against consumerism
And for the rice garment,
We should protest by raising our voice.

Forever a rebel.
Fight for speech and rights.
Revolt against the criminals.
We must speak louder.

Avishek Bhattacharjee
Electronics and Communications Engineering, 4th Year

IF NOT MEANT TO BE, WHY SO DREADFULLY BEAUTIFUL?

In darkness cast by floating dreams,
Dreadfully beautiful, it seems.
Whispers weave a story untold,
If not meant to be, why this hold?

Felt the same attraction in your gaze,
Entwined in love's mysterious maze.
Felt years ago, that felt, hauntingly near
If not meant to be, why the tear?

Living through the starlit skies,
A paradox of not-so-sweet goodbyes.
Silent echoes of what could be,
If not meant to be, why the symphony?

In petals fallen, love's refrain,
Your smile gave me both joy and pain.
Why the beauty, bittersweet,
If not meant to be, why complete?

In the agony of time we weave,
Rings of Silverish hope, and yet, deceive.
Dreadfully beautiful, the mystery,
If not meant to be, why this symphony?
Still hoping ,you're gonna be mine,
The torn up roses,will again,shine.
I'll cheer up to the tone once again
"You're mine,mine,mine……."

Swastik Roy
Computer Science and Engineering, 3rd Year

NATURE

The sun rises, the sky smiles,
In winter, raindrops count the stream.
Flowers open their mouths to bloom,
In the carnival of clouds, shadows play.

The wind comes dancing down the road,
Songs sing in the green grass.
Occasionally, in between, a glimpse,
Sweet smiles on a complete face.

The moon rises, night comes,
Stars in the sky understand knowledge.
In a sleeping heart, dreams touch,
Whispering "Goodnight" in the evening.

Dipti Bag
Electronics and Communications Engineering, 3rd Year

DID WE JUST GROW UP?

In the park where strays roamed free,
Remember we ran with glee,
In youthful spree.

Remember birthdays, a special condition
No study, a day of joyous rendition.

After school, remember the forced small nap,
Memories we cherish, in our heart's lap.

Remember begging for moments, like fools we may.
Yet time slips, childhood fades away.

Remember the days we'd lost?
Childhood's name, the ultimate cost.

As we remember stepping into adulthood's door,
Time's dance in a cup, forevermore.

Sayantika Choudhuri
Computer Science and Engineering, 1st Year

REALISATION

On Christmas, a son asks Dad-
"Where is my gift?"
Dad is busy tumbling.
His words "I am t...." Fainted.
Son didn't get that. He said –
"Santa doesn't love me. Nor does Dad".
Hearing this, Aunt came out,
Told him "Be quiet else ..."
With a crumbling voice.
He was suppressed. Yes, he was.
But did that stop him from realising
In what pathetic situation the society was?
Seeing Dad unable to stand,
Mom roaming with other guys,
Made a deep impact on his mind.
He chose to be a saint,
A saint who would return family values,
Someone who would reach beyond the
Realms of materialism and lust.

School isolated him. To others,
His thoughts became old fashioned.
He saw his Dad die of cirrhosis.
Saw how the society failed
And crumbled in front of him.
A society so high in materials
And yet so low in humanity.
A moral-less society taught him
To become stronger,
To overcome grief and
To choose dignity over money.

He did that, he left home at 18
To find his way through the woods
In a generation of AI
To find true solace in the riverside.
He then realised how happy he was,
How happy nature was able to make him.
The flowers, petals, rocks,
Fish, gardens and sheep in flocks,
Was a treat to his mind,
An eye opener to the world.

He explored, made others explore.
Saw through the eyes of shallow humans,
Understood deep through nature,
Boldly preached himself to be mature.
Yes, he was mature.
Yes, he was mature.

Sakshar Das
Computer Science and Engineering, 2nd Year

f (x) = CHOCOLATE

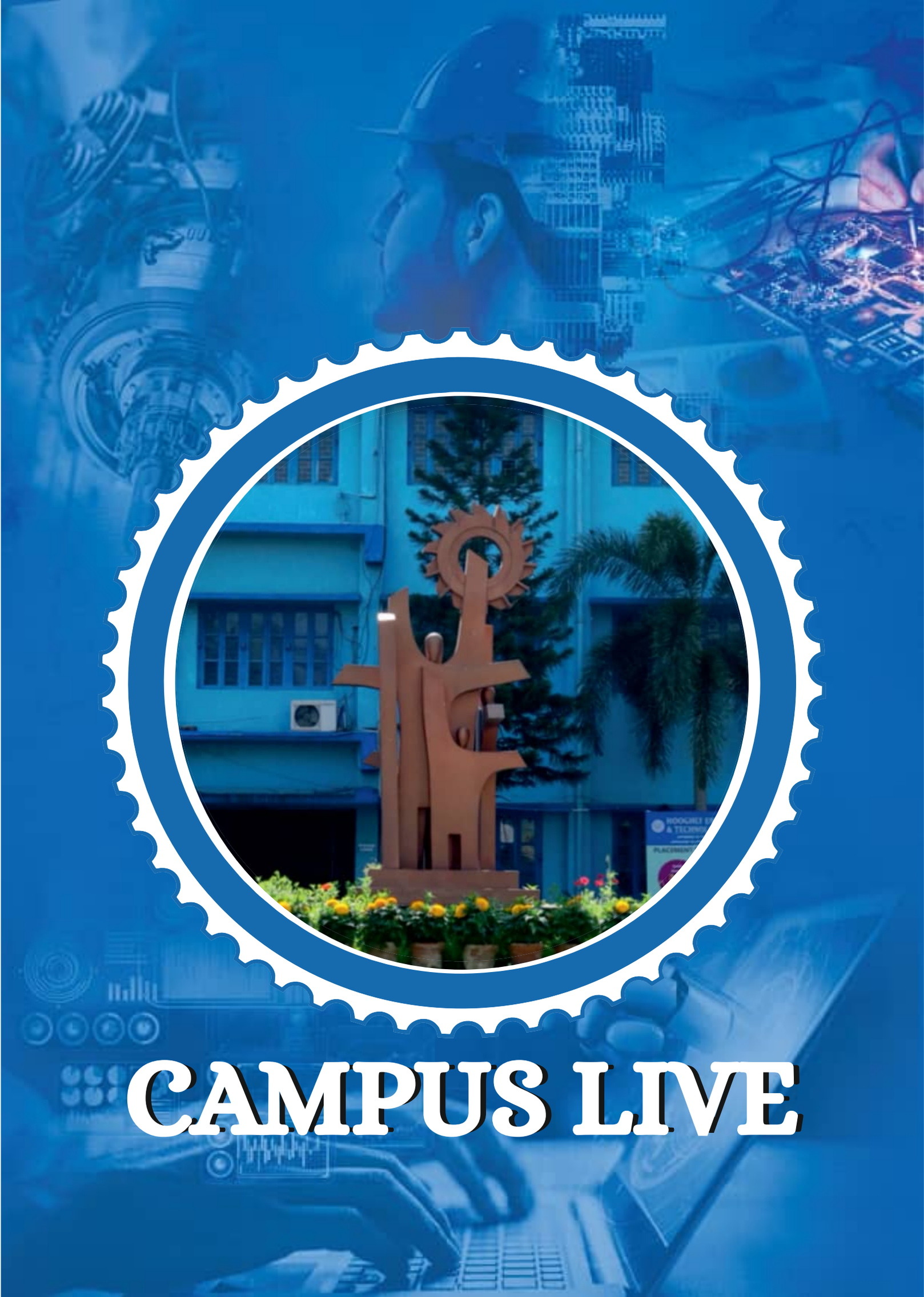
If you want to live on this Planet,
You must eat lots of Chocolate.
Chocolates can be savoured by all,
Both young and old who are short and tall.
Chocolates can give you motivation
Just before your final semester examination.
Chocolates can be linear, circular or elliptic,
It depends on your choice of geometric.
There is no limit, maxima or minima,
You can eat Chocolate while watching a cinema.
Chocolate is a 'Multivariate' of cocoa and milk,
Integrated in the richness of 'Cadbury Silk'.
Eating Chocolates throughout the day is logical,
Be assured you won't be admitted in L' Hospital.
Chocolates can be dark, white and addictive
Just like the first and second order derivative.
You can have Chocolate when you are tired or retired,
Or, in case you are depressed and not inspired.
I recommend eating Chocolates to all my friends,
Because Chocolate never offends or pretends.
My doctor has advised me to eat Chocolate,
Written in his prescription as a Maths postulate.
But,
One fact I must confide in you, the truth,
I can't eat Chocolate because I have no tooth.

Sagnik Dutta Mazumdar
Electronics and Communications Engineering, 1st Year

WINGS OF POESY

Oh! That vast sky is calling me
With its wild blowing wind...
I want to feel the wind
I may look the same as others
but I won't follow
the same path as others
May the civilization put me down
But...
I refuse to work as a worker of a factory
that drains out all my emotion
and conspires me to turn from a living being
to a machine
I don't find myself
in the same corners of home.
I want to look around the world
When the dark clouds
pour the drops of rain on me
I can feel the ignited desire
that wants me to break through.

Bishal Bhuinya
Computer Science and Engineering, 2nd Year



CAMPUS LIVE

NSS : Blood Donation Camp 2022

Blood is one of the most essential fluids of our body that helps in the smooth functioning of our body. Blood donation refers to a practice where people donate their blood to people so it helps them with their health problems. A blood donation occurs when a person voluntarily has blood drawn and used for transfusions and/or made into biopharmaceutical medications by a process called fractionation. Blood donation is literally life-saving which helps people. It is also a sign of humanity that unites people irrespective of caste, creed, religion and more. In a country like India established supplies are limited and keeping this need in mind a blood donation camp was organized by NSS unit of Hooghly Engineering Collage in association with Students Health Home on 20th April, 2022 in the college seminar room. 111 (one hundred eleven) students donated blood in the camp.

World Environment Day is celebrated every year on the 5th of June to raise global awareness to take positive environmental action to protect nature and the planet earth. It is a day that reminds everyone on the planet to get involved in environment-friendly activities. This year's theme for World Environment Day is 'Only One Earth'. While our individual consumption choices make a difference, it is collective action that will create the transformative environmental change we need, so we can advance to a more sustainable and just Earth, where everyone can flourish. 'Only One Earth' advocates for transformative environmental change on a global scale.

On 04.06.2022, Hooghly Engineering & Technology College celebrated this special day with a tree plantation and an online drawing submission. Dr. Avijit Maity, Secretary, HETCS, and Dr. Smitadhi Ganguly, Principal in-Charge, HETC advised the students to work more and more in alternative energy, waste management, sustainable development, sewage treatment, and the prevention of toxic gas emissions to avoid pollution of the environment. To avoid carrying plastic bottles or bags. As plastic is non-biodegradable opt for biodegradable options. Even, a small amount of effort by every individual could mark a huge difference in saving Mother Nature.

ONLY ONE EARTH

NSS : INTERNATIONAL YOGA DAY 2022

International Yoga Day is celebrated annually on June 21st since its inception in 2015. The United Nations General Assembly declared this day to promote global health, harmony, and well-being through the practice of yoga. It promotes unity and peace by transcending cultural, linguistic, and regional boundaries.

NSS Unit of HETC organised a 1-hour yoga session on 21st June, 2022 to commemorate the special day. Dr. Smitadhi Ganguly, Prinicpal in-Charge, HETC, inaugurated the event by stating the importance of yoga to not only benefit physically but mentally as well. Mr. Swaprakash Roy (Staff member, HETC and Trainer, Chief Instructor Founder and Technical Director at Academy of Self Defence & Martial Arts Research India) performed as well as guided all the participants through various yoga mudras successfully. As the examinations were going on, the students were unable to participate in the program but were later encouraged to perform them in the comfort of their home.

The event ended with a vote of thanks to our instructor, Mr. Swaprakash Roy and a serene song performed by Dr. Rajdeep Paul, HOD, CE Department.

NSS : Seminar on Mental Health Awareness

On 28.07.2022, a Mental Health Awareness Seminar was organized in college auditorium aiming to educate participants about various aspects of mental health and create awareness about this pressing issue in the auditorium, HETC. The seminar commenced with an opening speech by Mr. Joydeep Dam, who introduced the objectives of the event and emphasized the importance of mental health awareness in society today. He began by highlighting the magnitude of mental health problems globally, stressing the significance of recognizing symptoms, intervening early, and providing support to individuals facing mental health issues.

The session was very interactive and the participants were encouraged to share their lowest point in life which allowed the speaker to share some activities and techniques for managing stress, building resilience, and enhancing psychological well-being. Information about local mental health organizations, support groups, and online platforms for mental health support were shared at the end of the seminar, encouraging individuals to seek help for themselves or assist others.

The session ended with a vote of thanks and a token of appreciation presented to the speaker, Mr. Joydeep Dam by Dr. Avijit Maity, Secretary, HETCS.

NSS : 75th INDEPENDENCE DAY 2022

The Hooghly Engineering & Technology College is set to commemorate the 75th Independence Day with fervor and patriotism. Under the theme "Azadi Ka Amrit Mahotsav Har Ghar Tiranga," a Flag Hoisting Ceremony is scheduled in the campus at 9:00 am on 15th August 2022. The event aims to instill a sense of national pride and unity among students and faculty. Following the flag hoisting, the NSS Unit of the college will organize a Tree Plantation drive, contributing to environmental sustainability. Additionally, a cultural program will unfold, showcasing the diverse talents within the college community. This celebration aligns with the nationwide enthusiasm to mark this historic milestone and underscores the institution's commitment to holistic development and social responsibility.

Unit of Hooghly Engineering & Technology College celebrated Independence Day 2022 with flag hoisting and tree plantation.

NSS : Online Drawing Competition Commemorating WORLD AIDS DAY

National Service Scheme (NSS) unit of HETC, organized an online drawing competition on 1st December, 2022 to commemorate World AIDS Day which is celebrated on 1st December every year.

The drawing competition aimed to increase awareness and understanding of HIV/AIDS among participants as well as encouraged them to express their creativity and artistic talents. The event sought to engage a large number of participants, promoting inclusivity and ensuring diverse perspectives.

Participants submitted their art through a Google Form link provided by the NSS unit, providing relevant details. The submissions were posted on social media platforms, to maximize awareness. A panel of experienced teachers were selected to review and evaluate the submitted drawings. The winners were chosen based on creativity, artistic excellence, meaningful representation of theme, and overall message delivery.

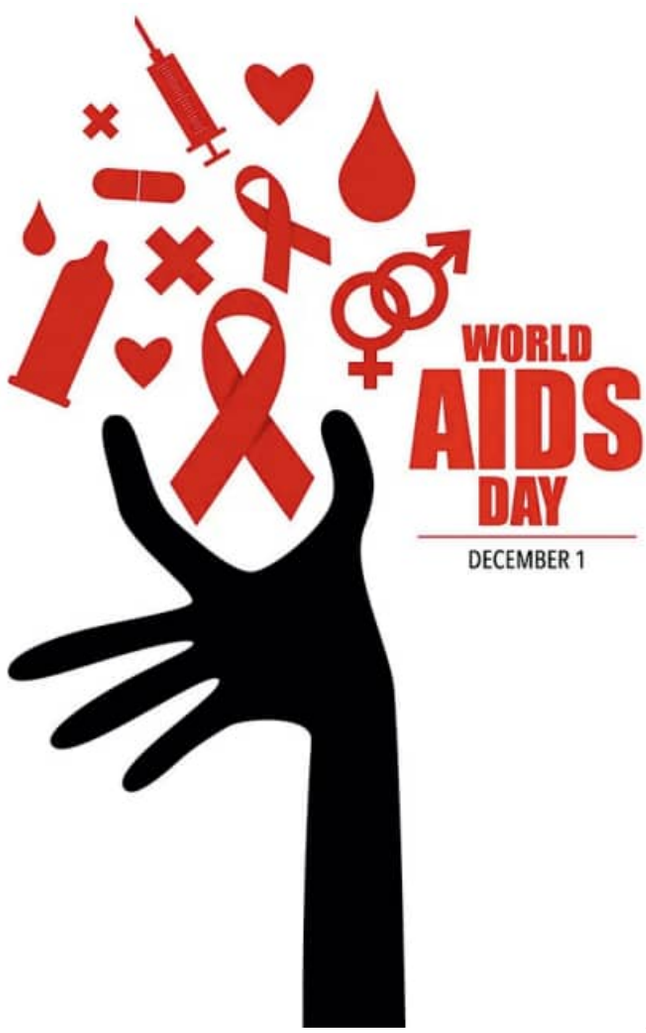
Winner Details:

1st Position: Srijan Chatterjee, ECE Department, 1st Year

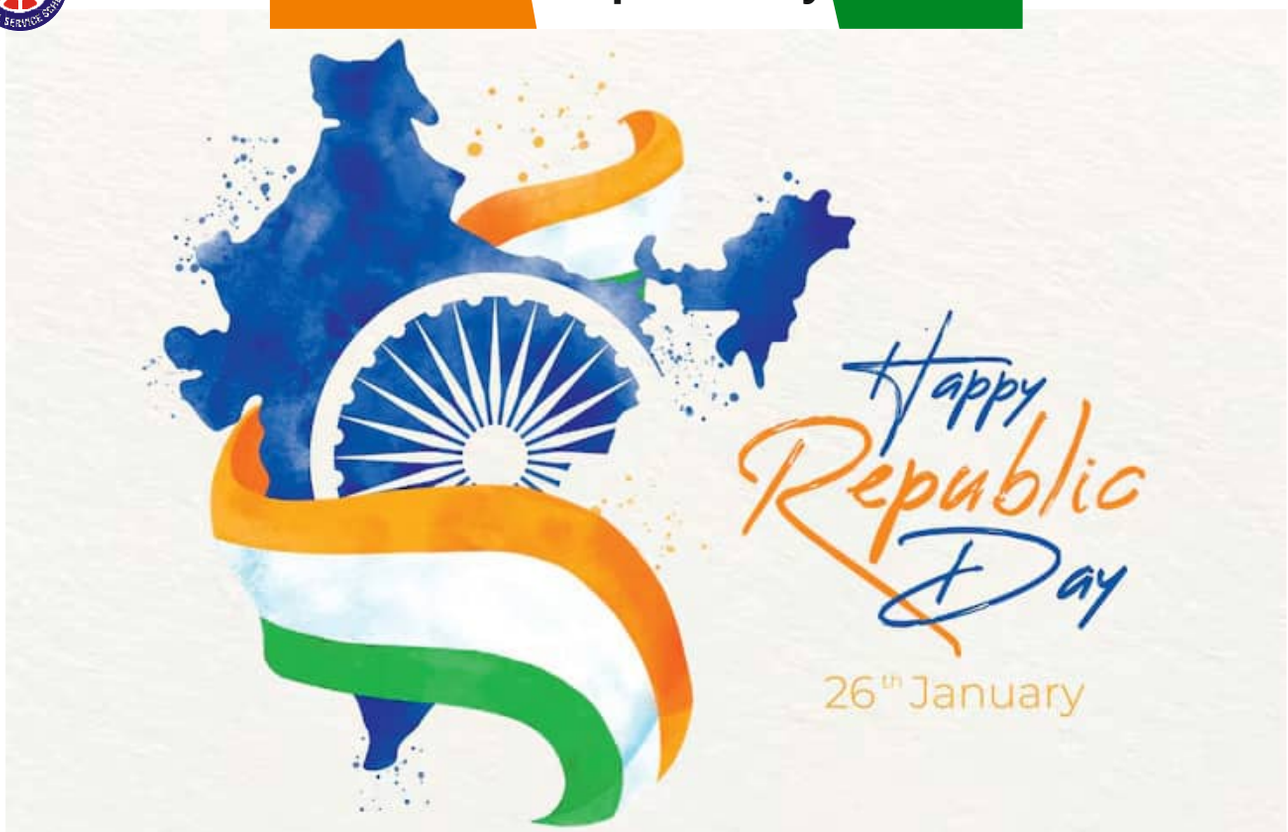
2nd Position: Dibyesh Das, EE Department,1st Year

3rd Position: Debjit Mitra, CSE Department,1st Year

With its positive outcomes and community engagement, this event served as an example of how such initiatives can contribute to raising awareness and mobilizing communities towards a healthier future.



NSS : Republic Day



On the occasion of Republic Day 2023, HETC (Hooghly Engineering & Technology College) celebrated the occasion with great enthusiasm and patriotic fervor. The event began with the gathering of students, faculty, and staff at the college premises, where a vibrant atmosphere of unity and pride filled the air. The celebration commenced with a formal flag hoisting ceremony, symbolizing the sovereignty and integrity of India. Dr. Smitadhi Ganguly, Principal in-Charge, HETC unfurled the national flag, and all attendees stood in solemn respect, paying tribute to the sacrifices made for the country. Following this, the preamble of the Indian Constitution was read out aloud, reminding everyone of the fundamental values of justice, liberty, equality, and fraternity that form the bedrock of the nation. To reinforce the spirit of environmental stewardship, a tree plantation drive was also organized during the celebration. Students and faculty participated actively, planting saplings around the campus, signifying their commitment to the protection of the environment and sustainable development. The event concluded with the singing of the national anthem, uniting everyone in a moment of pride and reflection. Republic Day celebration at HETC not only honored the nation's democratic principles but also instilled a sense of responsibility towards the environment and community among the participants.

NSS : INTERNATIONAL MOTHER LANGUAGE DAY 2023

On the occasion of the International Mother Language Day, the NSS (National Service Scheme) unit and SAC (Student Activity Cell) of Hooghly Engineering & Technology College arranged a cultural program on 21.02.2023 to pay tribute to the brave souls who laid down their lives for their language.

Though it was neither Independence Day nor Republic Day but, the atmosphere around the campus was patriotic. The students of HETC, along with the teachers came together to decorate the campus to mark the importance of this day. The stage was set up and the environment around made the audience feel emotional from within. When on one side of the stage stood the Shahid Minar on the other side of the stage stood the Shahid Manch covered in garlands, both of which were enough to make anyone remember of what went into gaining the freedom of language and linguistic identity. The program started with the narration of the history and importance of 21st February and was followed by paying homage to the martyrs of language. After this, the dignitaries were called upon stage to deliver their valuable speech, who once again stressed the importance of the mother tongue and the necessity to hold on to the roots of our native language. All these were followed by various events of singing, dancing and recitation by the students. The annual college magazine Ethnic was also unveiled and published on this day, by the hands of the respected dignitaries. Lastly, the whole program ended on a positive note and a promise to make our language and our motherland the greatest in the world.

NSS : DISTRIBUTION OF MOSQUITO NET TO THE UNDER PRIVILEGED

On Saturday, 4th March , 2023 , An event of distributing mosquito nets to the people who have to spend nights on street was organised by the NSS unit of HETC , for this event over twenty five students of HETC along with the teachers headed towards Hooghly Ghat Station .

The entire team of teachers and students left the college premises at 3:30 pm. They carried over 40pcs of mosquito nets and some refreshments for the under privileged in that area. The team awaited there for about twenty minutes with zeal and enthusiasm to make a small contribution to fulfil the needs of the families who are deprived of the basic necessities of livelihood.

After a while, few ladies gathered and one by one the mosquito nets were distributed by the students of the NSS unit. The entire event was a grand success as there was a smile of relief on their faces as on that very day they could protect their kids and family members from dengue, malaria and other contagious diseases that is spread by flies, mosquitos and other rodents ensuring a proper overnight sleep. The smiles and relief on their faces gave a feeling of satisfaction and real happiness which is possible only when we are able to help the people in need. They all left giving a lot of blessings and gratitude, with this the entire event came to an end and the team left for the college .

Thus, this event was a grand success with constant support of the program officers of the NSS unit and even due to the support of the members and students of the NSS UNIT.

NSS : WORLD EARTH DAY 2023

World Earth Day is celebrated annually on April 22nd to raise awareness about environmental issues and promote sustainable practices. On April 22nd, 2023, the NSS (National Service Scheme) volunteers of Hooghly Engineering & Technology College organized a special event to commemorate World Earth Day and contribute to the preservation of our planet.

The objective was to plant the saplings in recyclable plastic containers, which would serve as a temporary home for the trees until they grow strong enough to be transplanted into the ground. This practice not only ensures the survival of the saplings but also promotes the use of recyclable materials.

Each volunteer ensured that the sapling was placed securely in the container and properly covered with soil. They then watered the saplings to provide them with the necessary nutrients for growth.

Each NSS volunteer recorded a 30-second video clip showcasing the entire process. The video clip aimed to document the efforts of the volunteers and inspire others to participate in similar initiatives. The video highlighted the importance of tree plantation and the use of recyclable materials for a sustainable future. After the video clips were collected, they were collaged into a single video incorporating all the different perspectives and moments captured. The collage beautifully depicted the unity and enthusiasm of the NSS volunteers in celebrating World Earth Day.

The final collage video was later uploaded on the official social media handles of our college. The intention was to reach a wider audience and spread awareness about the importance of protecting the environment. By sharing the video on social media, the NSS volunteers aimed to inspire others to contribute towards creating a greener and more sustainable future.

This event was an excellent example of how collective efforts, no matter how small, can make a significant impact on environmental conservation. The NSS volunteers, through their actions and video, encouraged others to take responsibility for their environment and actively work towards its protection.

NSS : WORLD ENVIRONMENT DAY 2023

World Environment Day is celebrated every year on the 5th of June to raise global awareness to take positive environmental action to protect nature and the planet earth. It is a day that reminds everyone on the planet to get involved in environment-friendly activities. This year's theme for World Environment Day 2023 is '#BeatPlasticPollution'.

Hooghly Engineering & Technology College celebrated World Environment Day 2023 on 05.06.2023 with a tree plantation drive. Prof. (Dr.) Tarak Kumar Bandyopadhyay, President, HETCS, and Dr. Smitadhi Ganguly, Principal in-Charge, HETC advised the students to avoid carrying single use plastic bottles or bags and using reusable bags, water bottles and containers. As plastic is non-biodegradable, opt for biodegradable options. Plastic litter is a big problem for nature and can harm ocean creatures, land animals and humans. There are really a lot of plastic in the ocean, more than 5 trillion little pieces. Furthermore, every year, another 8 million tons of plastic go into the ocean.

Even, a small amount of effort by every individual could mark a huge difference in saving Mother Nature.

NSS : INTERNATIONAL YOGA DAY CELEBRATED BY NSS VOLUNTEERS ON JUNE 21, 2023

International Yoga Day is celebrated worldwide on June 21st each year, aiming to promote the physical, mental, and spiritual well-being of individuals across the globe on International Yoga Day, NSS volunteers actively participate in events and encourage the community to adopt a healthy and balanced lifestyle through yoga and meditation practices. Four different yoga asanas were chosen to represent the diversity and versatility of yoga practices. Immediately after the event, NSS volunteers submitted the photos of their yoga asanas through Google form which were later uploaded on the official twitter handle of NSS Unit of HETC. The NSS volunteers' participation in celebrating International Yoga Day on June 21, 2023 demonstrated their commitment to spreading the benefits of yoga and its positive impact on physical and mental health. The efforts of these NSS volunteers undoubtedly helped create awareness about the power and importance of yoga in nurturing a healthier society.

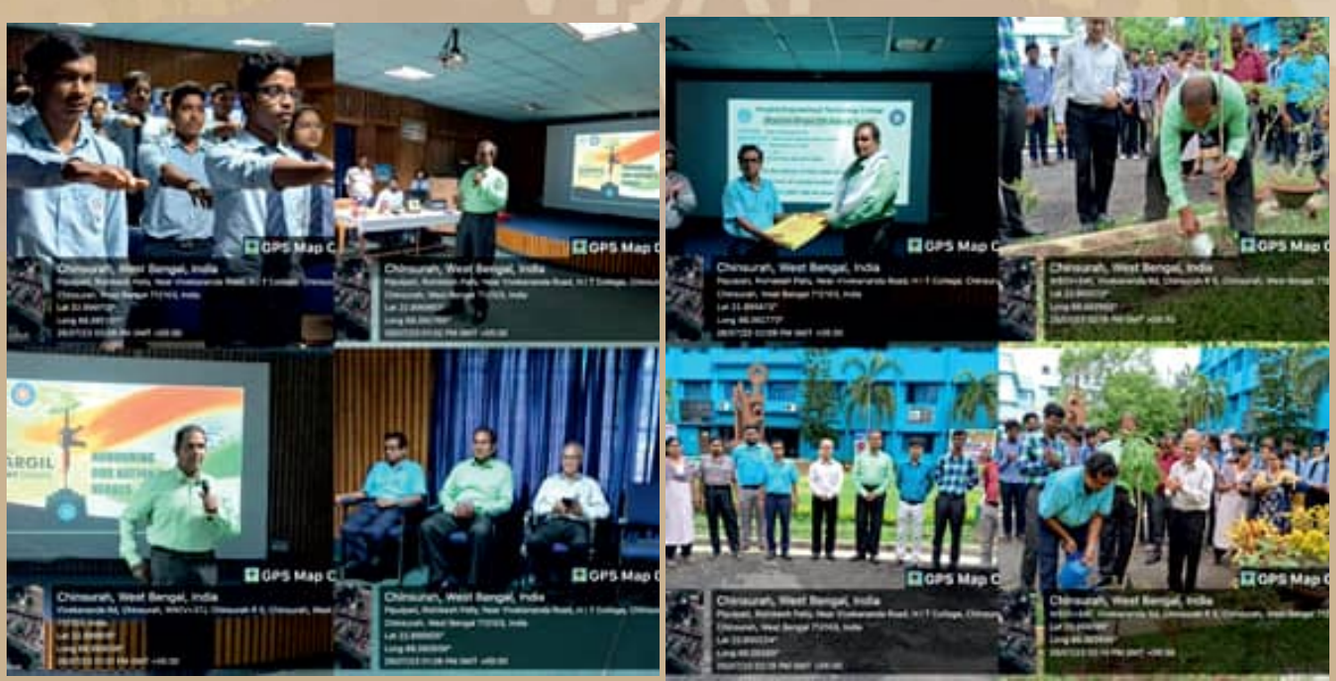
NSS : KARGIL VIJAY DIWAS 2023

Kargil Vijay Diwas is observed on July 26th every year in India to commemorate the success of "Operation Vijay" which was launched on 26th May 1999 to reclaim the control over the Indian territory from the infiltrators. The Indian Army, Air Force, and Navy collaborated in this operation, displaying extraordinary grit and determination that led to a resounding victory. It is a day to honour and pay tribute to the brave soldiers who fought against all odds to protect our nation's sovereignty.

Hooghly Engineering & Technology College celebrated this day by arranging a Panch Pran pledge and tree plantation program to honour the war heroes and express gratitude for their contribution to national security. Ex-Hon Sub Maj Tapan Kumar Chowdhury (Kargil War Veteran) was invited as Chief Guest of the program. He shared his valuable experience of the sacrifices made by the Indian soldiers on a daily basis during wartime. He also taught many valuable life lessons and fundamental duties as an Indian citizen through interactive stories.

In conclusion, Kargil Vijay Diwas is an important day in the Indian calendar that honours the brave soldiers who safeguarded our nation's integrity during the Kargil war. It is a day of remembrance, unity, and gratitude towards those who sacrificed their lives for the nation.

#Panch Pran Pledge: We the citizens of India make the goal of developing India and remove the trace of colonial mindset, we pledge to take pride in our roots and stand united with the sense of duty among all of us.



NSS : 75th INDIAN REPUBLIC DAY CELEBRATION

75th Indian Republic Day was celebrated with great fervour and enthusiasm by the NSS (National Service Scheme) volunteers of Hooghly Engineering & Technology College on 26th January 2024.

The event commenced with the unfurling of the national flag by Dr. Smitadhi Ganguly, Principal in-Charge, accompanied by the chants of Vande Mataram. Saluting our nation's flag, a symbol of unity and freedom, filled every heart with reverence and gratitude. The occasion also involved the reading of the preamble of the Indian Constitution, with an explanation of its meaning to the students, instilling a sense of pride and patriotism in their hearts.

Following the flag hoisting ceremony, cultural performances were presented by the students, showcasing the diverse cultural heritage of our country. Each performance bore the essence of Indian culture, nurturing a sense of pride and appreciation for our rich heritage. Amongst the student performances, a standout moment was the dance performance by the daughter of one of the staff members. With graceful movements and intricate formations, she captivated everyone's attention and won thunderous applause.

The event concluded on a high note with the recital of the national anthem, an ode to the sacrifices of the freedom fighters who laid down their lives for the nation's independence. As the melodious notes filled the air, the entire college community stood united, their hearts brimming with patriotism and a renewed sense of duty towards the nation.

SEMINAR-WORKSHOP

GUEST LECTURE ON FUNDAMENTALS OF MACHINING & SOME INVESTIGATION ON MACHINABILITY WITH DIFFERENT TOOL & WORK COMBINATIONS

On 14th September, 2022 a guest lecture was organised by Hooghly Engineering & Technology College on the topic Fundamentals of Machining & Some Investigation on Machinability with different tool & work combinations at HETC auditorium.

We would like to thank Prof. (Dr.) Santanu Das, Professor of Mechanical Engineering Department, Kalyani Government Engineering College, for delivering a valuable speech at Hooghly Engineering & Technology College. It was very interesting and gave us the chance to learn many things about machining and machinability with different tool and work combinations. The various stages of this program are briefly described below:

The seminar began at 11:30 a.m. with an opening speech by Dr. Smitadhai Ganguly, Principal in-Charge and Head of Mechanical Engineering Department, Hooghly Engineering & Technology College. Then the Secretary of HETC, Prof. (Dr.) Avijit Maity gave an overview about the seminar. The period was divided into two sessions: 11.30 am–2 pm and 2.30 pm–3.30 pm. About 65 students from Mechanical Engineering Department and 10 faculty and technical staff of HETC were attended the seminar.

The lecture was started with the definition of Machining as a process in which excess materials are removed from raw workpieces in the form of chips to make a desired product. Then he defines another important term,'machinability' as the ease of machining a work piece using a cutting tool without any defects, as judged by — tool life being high, cutting temperature.

Being low, wear rate being low. Thereafter, he showed us some important diagrams of someterms to help us understand them easily. These diagrams include machining mechanisms, shear angles, built-up edge formation, the effect of inclination angle, Merchant's circle diagrams, and so on. He also added information about the characteristics, effects, and causes of BUE.

He began the second session by discussing the causes of oblique cutting and chip flow deviation. Then he goes on to discuss the effect of inclination angle, mechanics of machining, cutting temperature, geometrical modification of them, the need for new cutting tools, and so on, with appropriate diagrams. There was a question-answer session to clear all the doubts.

The program was ended at 3:30 p.m. after board of thanks given by Mr. Samir Ghosh, Course co-coordinator of Mechanical Engineering Department.

NATIONAL CONFERENCE ON EMERGING TECHNOLOGIES AND ADVANCEMENT IN ARTIFICIAL INTELLIGENCE AND ROBOTICS

On 1st April, 2023 a national conference was jointly organised by Computer Science and Engineering department and Electronics and Communications Engineering department of Hooghly Engineering & Technology College. The conference was organised to enlighten the students with the latest facts regarding the emerging technologies and advancement in artificial intelligence and robotics. This event was organised basically for the students pursuing their B. Tech in CSE and ECE department of the host college as well as other colleges were also welcomed for this technical webinar as the entire conference was held in both online and offline mode as it was on a national level. This was made possible through the help of the most feasible online video conferencing platform none other than Google meet. More than 200 participants were a part of this conference. The major participation was from Hooghly Engineering & Technology College itself.

The webinar began at about 10:30 am in the seminar hall. The event was graced by the August presence of Prof. (Dr.) Tarak Kumar Bandyopadhyay, President of HETCS; Prof. (Dr.) Abhijit Maity, Secretary, HETCS; Prof. (Dr.) Subhasis Bose, Principal, HETC and one of the guest speaker Dr. Tanmay Pal, Asst. Prof. from School of Mechatronics and Robotics IIEST, Shibpur, West Bengal as well as the other faculty members especially the HOD of CSE dept. Dr. Biswajit Haldar. The conference started with the felicitation of the honourable guests and lighting of the holy lamp.

The beginning of the conference was marked by the first session of the keynote speaker Dr. Tanmoy Pal. His lecture was an amazing one as all the attendees came to know the interesting facts regarding the inventions of biotechnical gadgets that are made to ensure better living of the disabled such as prosthetic hands and legs as well as hearing aids, specialised glasses for the colour blinds, development of brail for blinds to communicate, pacemaker of the heart and so many other inventions with their functioning and design were explained. This session was followed by the online technical session by Dr. C.M. Jadhao, Principal of Mauli Group of Institution's College of Engineering and Technology, Shegaon. He enlightened the students with the brand-new features and developments in artificial intelligence and the advancement in technology and machines, like the new launch of chatbots and the brand new "GPT" – named chatGPT. Their working principles and its usage were also covered in his lecture.

The last and the final session was of Dr. Ajay Thakre, Professor in Electronics Engineering of Sipna College of engineering Amravati on the emerging networks and technologies, especially the 5g network. This was also an online session; in this he had covered the pros and cons of the entire 5G network setup in India. The session gave a clear picture of the effectiveness of the 5G network, its working method, and it also stated the clear scenario of other networks and technologies. The "5G India 2020 mission" was one of the major areas of discussion and many such progress in tech world were discussed.

Thus, after a long stretch of six hours the seminar ended at 4:30pm. The entire conference was a splendid success as lots of information was shared. This was one of the most interesting tech conferences till date and one of the most necessary one as teaching-learning processes are undergoing radical changes as technology advances in education, which is favouring the emergence of new styles of learning which should always remain a part of our education system as every generation should update themselves with the along with the updating world.

ONE DAY SEMINAR ON RECENT TRENDS IN ELECTRICAL AND MECHANICAL ENGINEERING

The Department of Electrical and Mechanical Engineering of Hooghly Engineering & Technology College organized a one-day national conference on 'Recent Trends in Electrical and Mechanical Engineering' on 29th April, 2023. The conference was attended by faculty members and students of Hooghly Engineering & Technology College. The conference started with the lamp lighting ceremony by the chief guest Dr. Tridibesh Das, Associate Professor, Department of Mechanical Engineering, Kalyani Government Engineering College and honourable dignitaries of HETC. Then the inaugural speech was given by honourable Principal of HETC Prof. (Dr.) Pradosh Kr. Adhvaryyu. After a short tea break Dr. Tridibesh Das started his lecture at around 11.15 am. In his lecture Dr. Das talked about different types of renewable energy sources and extraction of energy from these various sources. The lunch break was introduced after this at around 1 pm and all the attendees are requested to reassemble at the seminar hall at 2 pm. The next lecture was given by Dr. Tapan Pradhan, Assistant Professor, Department of Electrical Engineering, National Institute of Technology, Silchar, Assam. Dr. Pradhan discussed about the recent trends in Electrical Engineering and the application of new technologies for industrial purposes. After another short tea break Mr. Sandipan Sarkar, Principal Consultant, Enzen Global Limited, UK delivered his lecture on EHV systems. He elaborately discussed about the EHV system connection design, power swing analysis and fault level studies. During the valedictory program conducted in the evening, the Chief Guest Dr. Tridibesh Das congratulated the institute for organizing this conference in the relevant theme. He also appreciated the active participation of students in presenting their works on recent trends and interest towards learning new innovative ideas.

ONE DAY SEMINAR ON ENERGY SCIENCE AND ENGINEERING

- The Department of Electronics and Communications Engineering, organized a one day seminar on the topic "Energy Science and Engineering" on 15th Dec, 2023
- Dr. Soumya Kanta Roy, Assistant Professor, Dept. of Civil Engineering, HETC, was the speaker of the event.

Topic of Discussion:

Energy harvesting and storage, energy conversion, energy materials, energy systems, energy efficiency, energy services, facility management, plant engineering, energy modeling, environmental compliance, sustainable energy, and renewable energy technologies are just a few of the topics covered by the broad field of energy engineering. One of the newest engineering specialities to develop is energy engineering. Energy engineering integrates economic and environmental engineering techniques with knowledge from physics, arithmetic, and chemistry. Energy engineers use their expertise to explore renewable energy sources and boost efficiency. Energy engineers' primary responsibility is to determine the most sustainable and effective ways to run manufacturing processes and structures. Energy engineers analyze such processes energy usage and make recommendations for how to make the systems better.

The seminar ended with a vote of thanks by the HOD of ECE, HETC, Dr. Ankan Bhattacharya.

ONE DAY SEMINAR ON EMBEDDED SYSTEM AND ITS APPLICATIONS

A seminar was organized by the ECE department on "Embedded system and its applications" on 25th February, 2023. The Speaker of the event was Prof. (Dr.) Swarup Kumar Mitra (HOD, ECE, MCKVIE). Departmental students, faculty, and technical assistants participated in the programme.

3-DAY STATE LEVEL WORKSHOP ON ADVANCED SURVEYING USING DGPS AND TOTAL STATION

A three days' State Level Workshop was organized by Civil Engineering Department titled "Advanced Surveying Using DGPS and Total Station" from 28th to 30th March, 2023.

OBJECTIVES OF THE WORKSHOP

This 3-day course offers a comprehensive introduction to Total Station and DGPS technology, system concepts, design, operation, implementation, and applications, including detailed information on the GPS signal, its processing by the receiver and the techniques by which GPS obtains position, velocity, and time.

The objective of the 3-day workshop is as follows:

- To gain an understanding of the measurement of angles, vertical and horizontal.
- To know the correct surveying terminology when using a total station
- To use the Total Station in a practical situation.
- To record the absolute location of any object.
- To comprehensively introduce GPS and DGPS technology, system concepts, design, operation, implementation, and applications, including critical information on DGPS concepts.
- To provide detailed information on the GPS signal, its processing by the receiver and the techniques by which GPS obtains position, velocity and time.
- To present current information on the status, plans, schedule, and capabilities of GPS and other satellite-based systems with position velocity and time determination applications.
- To fill in technical information gaps for those in the GPS and GNSS fields.

The faculty of Academic Institutions, UG, PG, diploma students, and Professionals from the different Industry attended the workshop.

Day 1 Session 1

Topics covered:

- Introduction to Surveying and Levelling
- Concept of Traditional Surveying
- Limitation of traditional surveying
- Introduction of Advance Surveying
- Advantages and application of Total Station
- Principal of GPS, DGPS, Terrestrial laser scanner
- Application of GPS and DGPS.
- Review of Photogrammetric Surveying
- Concept of Digital Image Processing
- Applications of Geomatics and 3D Mapping in Civil Engineering

Day 1 Session 2

Topics covered:

- Instrument Specification about Total Station and DGPS
- Setting the total Station in the field (Field Practice Centering, Levelling on Total Station)

Day 2 Session 1

Topics covered:

- Field Practice on instrument setup, job selection, and Job store data.
- Field Practice on Topography Survey using Total Station
- Layout preparation using Total Station

Day 2 Session 2

Topics covered:

- Static Global Positioning System Surveying (Understanding of Base Station and rover of GPS)
- Field Practice on Real-Time Kinematic and Differential GPS

Day 3 Session 1

Topics covered:

- Field practice on Stakeout points with GPS
- Field Practice on Topography Survey using Differential GPS

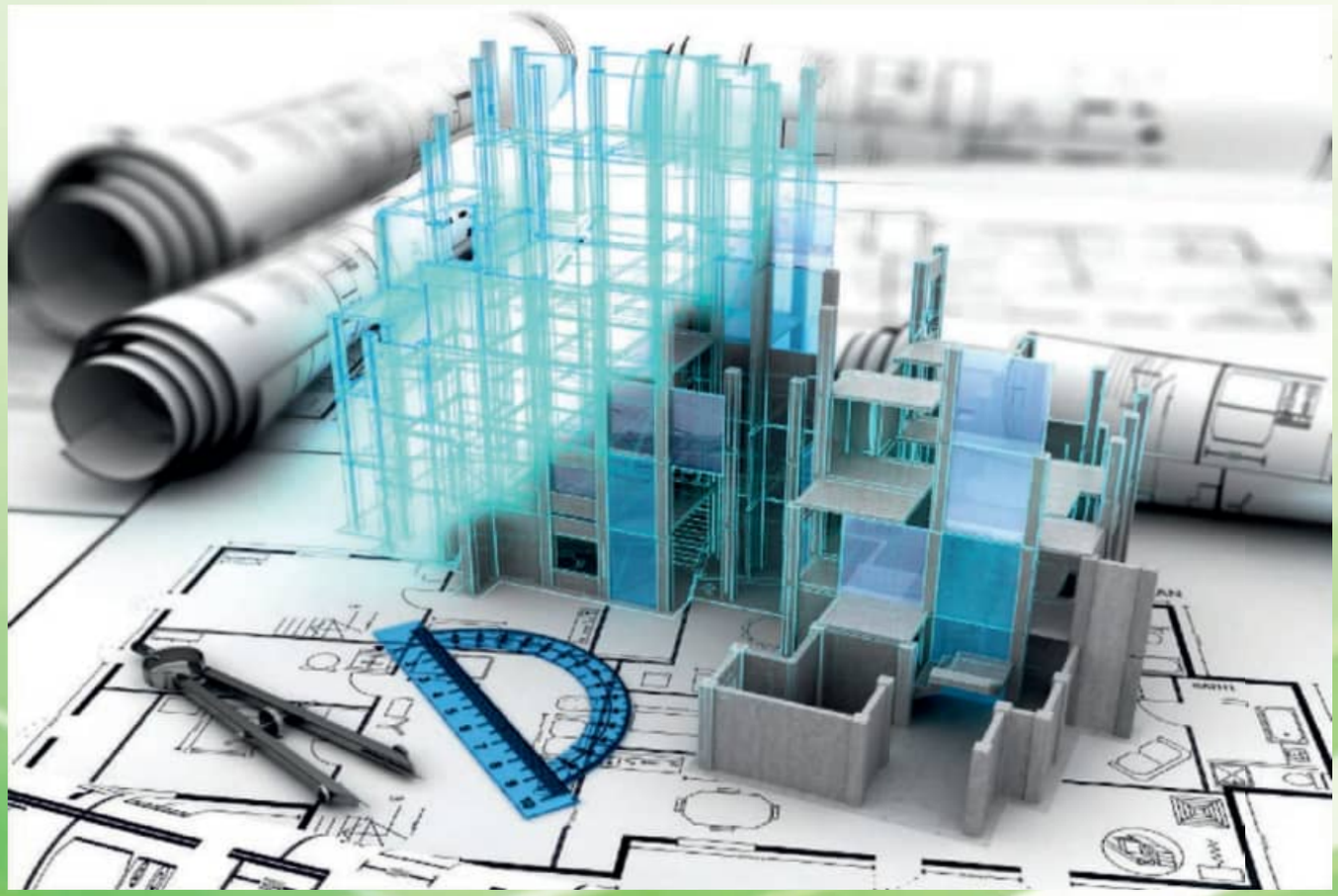
Day 3 Session 2

Topics covered:

- Data Processing of Total Station using software
- DGPS data Processing and locating the plot into a Google Map

ONE DAY SEMINAR ON RECENT TRENDS IN THE BIM INDUSTRY

A seminar on "Recent Trends in the BIM Industry" was organized by Civil Engineering Department along with IIC-HETC on 10/10/2023. The speakers were experienced and accomplished professionals from Pinnacle Infotech Solutions, W.B.



TWO WEEKS WORKSHOP ON REVIT PROFESSIONAL TRAINING

An event organized by Civil Engineering Department under Institution's Innovation Council (IIC) of Hooghly Engineering & Technology College (HETC) was a two week workshop on Design Thinking, Critical Thinking and Innovation Design particularly for the Civil engineering students from 18th January to 2nd February, 2024, at the Seminar Room/Reading Room of the College. The goal of the awareness program was to encourage and equip students with the necessary critical thoughts and design ideas to grow in their careers and to pursue opportunities and ideas that extend beyond the most likely professional paths. More than forty students of the College, along with faculty members, have attended the program. The resource person of the workshop was Ms. Rinky Mandal Dey, Managing Director, Industry Based Software Training Center, Chinsurah, West Bengal.

INSTITUTION'S INNOVATION COUNCIL
(Ministry of HRO Innitiative)

HOOGHLY ENGINEERING & TECHNOLOGY COLLEGE

VIVEKANANDA ROAD, PIPULPATI, HOOGHLY - 712103, W.B.

2 - WEEKS WORKSHOP ON

"REVIT PROFESSIONAL TRAINING:
An Approach to BIM"

ORGANIZED BY
CIVIL ENGINEERING DEPARTMENT

CHAIRPERSON
Prof. (Dr.) TARAK KUMAR BANDOPADHYAY

RESOURCE PERSON
Ms. RINKY MANDAL DEY
(MANAGING DIRECTOR, IBSTC)

CO-ORDINATOR
Dr. TANUMOY GHOSH

CO-ORDINATOR
Dr. SOUMYA KANTA ROY
Mr. SHIBASISH DEV
Mr. SAIKAT DATTA

DATE
18.01.2024-02.02.2024

REVIT

CONTACT
8961115386, 9433774141, 9874130569
www.hetc.ac.in **mail@hetc.ac.in**

ONE DAY SEMINAR ON IOT AND ROBOTICS

A seminar was organized by the Dept. of Electronics and Communications Engineering, on the topic, 'IOT and Robotics' on 12th March, 2024. The program was conducted by Conocimiento Infotech at the Auditorium.

The following topics were discussed in the seminar:

1. Fundamentals of IOT and Robotics
2. Emerging trends and technologies
3. Interdisciplinary applications in various sectors such as healthcare, agriculture, smart cities, etc.
4. Career opportunities and skill sets required in the field
5. Case studies and real-world implementations

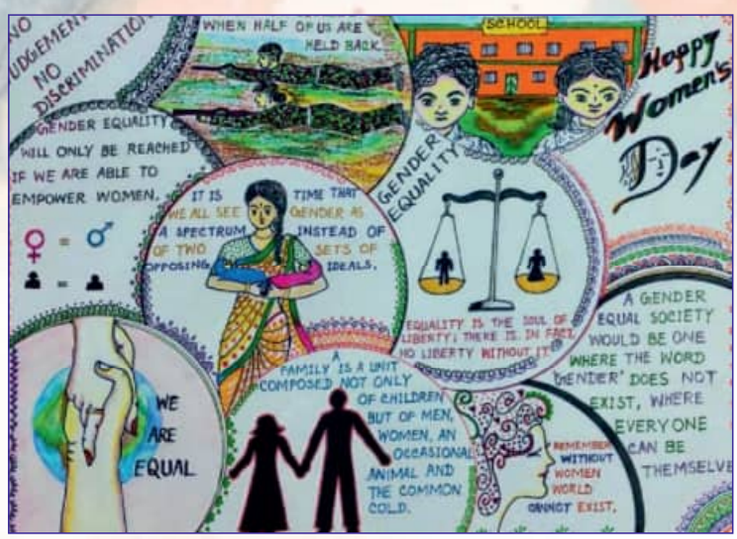
WOMEN'S CELL

POSTER DESIGN COMPETITION

Reported by Dr. Aishwarya Mukherjee, Convener, Women's cell

Women's Cell of Hooghly Engineering & Technology College organised an online poster competition on 08.03.2023 to celebrate the occasion of International Women's Day. The notice of the online poster competition along with the soft copy submission link was circulated among the students and they were asked to participate in the said competition. The topic of the online poster competition was "Gender equality". Total 06 (04 boys and 02 girl students) participants participated in the competition. All the posters were very good both in quality and ideas. The posters were evaluated by honourable jury members and 1st, 2nd, 3rd positions were decided. Monami Sarkar of 1st year CSE, was selected first in the online poster competition. Santanu Nag of 3rd year ME department was selected second and Anjita Darnal of 2nd year EE department was awarded the third prize.

1st

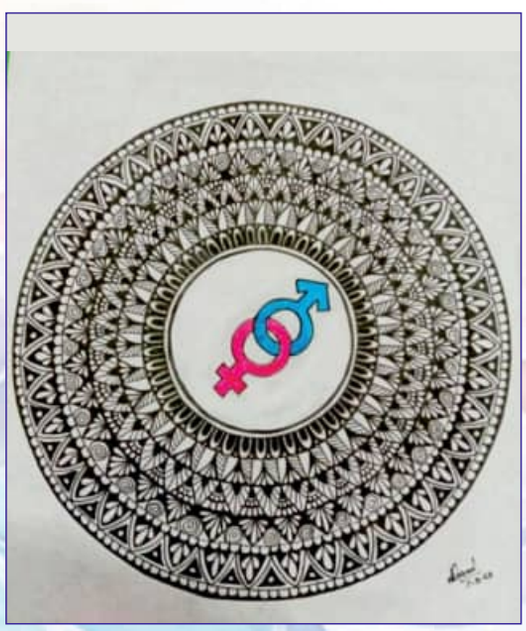


Monami Sarkar, Computer Science and Engineering, 1st Year

2nd

Santanu Nag,
Mechanical Engineering, 3rd Year

3rd



Anjita Darnal,
Electrical Engineering, 2nd Year

WOMEN'S CELL

SEMINAR ON IMPLEMENTATION OF SEXUAL HARASSMENT OF WOMEN AT WORKPLACE

Reported by Dr. Aishwarya Mukherjee, Convener, Women's cell

Women's Cell of Hooghly Engineering & Technology College in collaboration of Internal Committee organised a sensitization programme on the topic "Implementation of Sexual Harassment of Women at Workplace (Prevention, Prohibition and Redressal) Act 2013" on 21.12.2023 at 03.30 pm at college auditorium. Eminent advocate of Hooghly District Judges Court Mr. Suvendu Das was the speaker. He explained the topic clearly. Total 86 students and 43 staff members joined the programme. The session was very interactive. Mr. Das explained the doubts of the audience. The programme was very useful for the students as well as staff members.

WOMEN'S CELL

SEMINAR ON WOMEN'S HEALTH AND HYGIENE

Reported by Dr. Aishwarya Mukherjee, Convener, Women's cell

Women's Cell of Hooghly Engineering & Technology College in collaboration with Internal Committee of HETC arranged a lecture on "Women's Health and Hygiene" to celebrate the occasion of International Women's Day on 13.03.2024 at the Seminar Hall of HETC. Eminent physician Dr (Mrs.) Sheli Ghosh, Medical Officer, Chinsurah District Hospital delivered the speech in the seminar. Fifty-four girl students of the college along with eighteen female faculty members and female staff members attended the programme. Dr. Ghosh clearly explained about the health and hygiene issues related to women. She described the ways to get rid of the health and hygiene related problems specially connected to women. The session was very interactive. Girl students along with lady faculty members asked various questions on the issues. Dr. Sheli Ghosh gave answers to the questions. The programme ended with vote of thanks from the chair.

INDUCTION PROGRAMME 2022

Reported by Induction Programme Committee

The induction program for first-year newly admitted students was organized from 14.10.2022 to 03.11.2022 with the intention of providing a holistic orientation and enabling a smooth transition into college life. The programme consisted of sessions delivered by both guest speakers and in-house members, covering a wide range of topics essential for their academic and personal development.

Objectives of the Induction Programme are:

a. Familiarize students with the college's culture, values, policies, and resources.

b. Provide information on academic expectations, curriculum, and requirements.

c. Enhance students' understanding of available support services.

d. Foster a sense of belongingness and community among the new students.

Renowned professionals from various fields were invited to share their insights and experiences with the newly admitted students which covered topics such as career guidance, future technology, time management, leadership skills, mental health and work-life balance. Faculty members and college staff members conducted sessions to provide practical guidance on important aspects such as values & ethics, scholarship awareness, study skills, library use, and co-curricular activities.

Regular question and answer sessions at the end of each session were arranged to address students' doubts and concerns, ensuring they had a comprehensive understanding of the presented material. To familiarize the students with various facilities and departments, guided tours were arranged for them to explore the library, laboratories, sports complex, and other important locations on campus. After the end of the Induction Program, Feedback on the program was asked based on the guidelines of AICTE. Receiving an overwhelming response from the students indicate that the Induction Program was successfully conducted.

INDUCTION PROGRAMME 2023

Reported by Induction Programme Committee

The Student Induction Programme for first year students mandated by AICTE was held from 31.08.2023 to 13.09.2023. The program aimed to provide new students with valuable information and skills needed to succeed in their academic journey.

Various seminars were conducted during this period to cover topics such as universal human values, mental health, MAR (Mandatory Additional Requirements), MOOCs (Massive Open Online Courses), NSS (National Service Scheme), and Communication skills. These seminars were designed to enhance students' understanding and knowledge in these important areas.

The program started with an orientation program on 31.08.2023, where new students were introduced to the college's faculty, staff, facilities, and academic programs. It provided an opportunity for students to familiarize themselves with the campus and its resources.

Overall, the student induction program was successful in providing new students with essential information and skills, ensuring a smooth transition into college life.

Day 1:

An orientation program was organised for welcoming newly admitted college students and their parents to the HETC community. It provided an opportunity for students and their parents to become familiar with the college environment, receive essential information, and establish connections with faculty members, staffs, and other newly admitted students.

The programme began with a warm welcome to the incoming students and their parents by the senior students and college officials. A minute of silence was observed to pay respect to the foremost founder member and chief Advisor of Hooghly Engineering & Technology College, Prof. Rupchand Pal. It was followed by lamp lighting ceremony by Prof. (Dr.) Avijit Maity, Secretary, HETCS & Dr. Smitadhi Ganguly, Principal in-Charge, HETC and a few newly admitted first year students. Bidisha Goswami, CSE, final year student performed the inaugural song. After that, Tilak Ceremony was performed and refreshments were given to the students.

The programme continued on with speeches by Prof. (Dr.) Tarak Kumar Bandyopadhyay, President, HETCS, Prof. (Dr.) Avijit Maity, Secretary, HETCS, Dr. Smitadhi Ganguly, Principal in-Charge, HETC and all the HODs and DICs of all departments and a few more cultural performances by the senior students. A few newly admitted students also performed when called upon stage which helped in breaking the ice furthermore.

A guided tour of the campus was organized to familiarize students and their parents with the various academic and administrative buildings, libraries, computer labs, recreational facilities and canteen. A question and answer session was conducted to answer any queries the students and their parents may have and to encourage interaction among students, parents, and college staff.

Day 2:

A seminar on saving nature and wildlife was conducted by a passionate nature activist Mr. Chandan Clement Singh. The activist emphasized the urgency to preserve our natural resources, educate communities, and promote sustainable practices to safeguard the delicate balance of ecosystems for future generations.

Mr. Swaprakash Roy conducted a session of Yoga & Meditation, guiding participants through various poses and relaxation techniques. The session helped the 1st year students release stress and focus on their inner selves, promoting overall well-being and tranquility.

A meeting was held with the Anti-Ragging Committee members, led by Dr. Rajesh Patra, HOD, BSH Department. The purpose was to discuss strategies and initiatives to prevent and address ragging incidents in the institution. The committee proposed awareness campaigns, strict disciplinary actions, and counselling sessions for the victims.

Day 3:

A entry level test for the Special Bridge Course Training was conducted to assess candidates' proficiency in Maths, Physics, Chemistry, and English.

Mr. Swaprakash Roy conducted an informative self-defence session, empowering participants with essential skills and techniques. His expertise and interactive teaching style ensured an engaging learning experience for all, leaving attendees feeling more confident and prepared to protect themselves if necessary.

Mr. Sumanta Daw, Assistant Professor, CSE Department, HETC discussed the importance of mandatory additional requirements and how they can enhance the learning experience. Mr. Subhajit Roy, Assistant Professor, ECE Department at HETC, discussed the topic of MOOCs and Internshala.

Day 4:

Dr. Ankan Bhattacharya, HOD, ECE Department, HETC, gave a seminar on 'Universal Human Values'. He discussed the importance of values such as empathy, integrity, and compassion in shaping a harmonious society. The audience was enlightened about the significance of incorporating these values into their personal and professional lives.

Mr. Saktibrata Roy, as the Liaison Officer for HETC, coordinated a session on Scholarship Awareness. The session aimed to educate students about available scholarships and how to apply for them.

Day 5:

Mr. Ankit Roy, an Assistant Manager at the Reserve Bank of India and an alumnus of HETC, along with Mr. Aritra Mukherjee, Alumnus, HETC delivered a seminar on the topic "Four years of B.Tech - Alaunch pad for safe landing for the next 40 years. Market demands, job opportunities." The seminar discussed how a B.Tech degree serves as a foundation for a successful career and provides insight into the current market demands and job opportunities available for graduates in the field.

Day 6:

A seminar on Gender Sensitization was organized by the Women's Cell of HETC, featuring speaker Mr. Suvendu Das, Advocate, Hooghly District Judges' Court. Mr. Das addressed the importance of understanding gender issues, promoting equality, and combating discrimination. His insightful talk resonated with the audience, emphasizing the need for society to adopt a more inclusive approach towards gender.

Mr. Subham Ganguly, Assistant Professor, BSH Department, HETC, conducted a seminar on Communication Skills. The seminar covered various aspects of effective communication, including verbal and non- verbal communication, active listening, and body language. Participants gained valuable insights into improving their communication skills for personal and professional growth.

Day 7:

Ms. Madhumita Ghosh, a consultant psychologist, held an interactive workshop on mental health issues in the present situation. The workshop aimed to create awareness and provide strategies to tackle mental health challenges. Ms. Ghosh discussed the impact of the pandemic, social isolation, and stress on mental well-being. The students engaged in activities such as group discussions and mindfulness exercises. The workshop emphasized self-care, seeking professional help, and practicing empathy to promote a healthier society.

Day 8:

A seminar on 'Universal Human Values' was held at HETC, featuring Mr. Sibasish Deb as the speaker. In the seminar, Mr. Deb discussed the importance of universal human values in maintaining peace and harmony in society. He highlighted values such as respect, empathy, and honesty as essential for building strong relationships and solving conflicts. The seminar emphasized the need to cultivate these values for a better world.

Mr. Saurav Chowdhury, Senior Technical Assistant, BSH Department, HETC, gave a presentation on the topic "NSS Unit: Overview". The seminar aimed to raise awareness about the National Service Scheme (NSS) in community development. The seminar concluded with an interactive session, and a tree plantation session.

CULTURAL FEST

UTKARSHA 2023

Reported by Dr. Pratyay Debnath, Convener, UTKARSHA 2023

"UTKARSHA", the name itself speaks a lot amongst the members of HETC family. Hooghly Engineering & Technology College celebrates this vibrant annual cultural program as Utkarsha 2023.

Like every year, this year also, a colourful and memorable Cultural Fest Utkarsha 2023 was held on 11th January at Aqua Marina Water Theme Park, Hooghly. This event was whole day long. In this event the students of HETC get display their artistic sides.

At around 11.00 a.m. onwards the event came to live with the inauguration of Utkarsha 2K23 by our honourable Secretary HETCS, Dr. Avijit Maity and Principal in-Charge HETC, Dr. Smitadhi Gangly and President HETCS, Prof. (Dr.) T. K. Bandyopadhyay. After the lamp-lighting and inauguration speech ceremony, the performances were ready to light up the stage. It started with some soulful songs by the students followed dancing, poetry recitation beat boxing, stand-up comedy, group dancing, classical & fusion and lazy dance. Like previous year this year also we organized a spectacular "ramp walk event". After that the dance performance dazzled the audience by their moves. It was a proud moment for HETC to have such immense talents came out every year during the fest. Everyone sat glued to the show. Lunch was provided to the students, teaching and non-teaching staff members and guests present with the help of student volunteers under the supervision of teachers.

After the in-house events it was time to rock the stage by external artists. At the evening the ground was lit up by the mesmerizing performance of FAKIRA and TRAP. FAKIRA heated up the audience with some rocking songs. After their awesome performance, the stage was handed over to TRAP who made the audience banged their heads with the songs. Around 9.30 P.M. the great festive journey ended on a joyous and entertaining note making the day a memorable for everyone, the memories which would be carried by the every person present at that evening in their bottom of the heart. All of us really enjoyed a lot and dispersed with a sincere hope that such mega events should be organized every year for giving the scope to students showcase their talents. Last but not the least, I would like to congratulate all the core members, volunteers of the Utkarsha 2K23 as well as all the Teaching Non-Teaching staff members of HETC, all the Students and Stakeholder for their whole hearted support for the mega event.

SPORTS

INTRA COLLEGE CRICKET TOURNAMENT 2022

Reported by Mr. Dibyendu Samanta, Convener, Games and Sports Committee

Inter Department Cricket Tournament was held in the college playground on 20.12.2022 and 21.12.2022 with great zeal and excitement. Total 20 teams from 5 Departments (CSE, CE, ECE, EE, ME) participated in this tournament. The final match of the tournament was played on 21st December, 2022.This year Electrical Engineering 3rd Year and Mechnical Engineering 4th Year became the champion and runners up respectively.

- **Man of the Series: Chandan Das (Mechanical Engineering, 4th Year)**
- **Man of the Match: Sayan Gayen (Electrical Engineering, 3rd Year)**
- **Best Bowler: Sagen Murmu (Mechanical Engineering, 2ndYear)**
- **Best Fielder: Sudipta Dwari (Mechanical Engineering, 4th Year)**
- **Best Batsman: Soumyajit Mondal (Electrical Engineering, 3rd Year)**

Champion Team, Cricket Tournament-2022

Runners Team, Cricket Tournament-2022

SPORTS

ANNUAL SPORTS MEET-2023

Reported By Mr. Dibyendu Samanta, Convener, Games and Sports Committee

Annual Sports Day is an important event in every student's life. The Annual Sports Meet for Hooghly Engineering & Technology College was held on 14th January, 2023 at college playground. The sports meet involved the enthusiastic participation of the students of HETC. The boys' events were 300 meter run, long jump, high jump and shot put.100 meter run, balance race, potato race and musical chair were conducted for the girls.The meet was controlled by the sports officials. In all events active participation was seen. The winners of the various events were awarded with prizes and certificates.

The List of prize winners is given below:

Event	Position	Name	Department	Year
Musical Chair (Girls)	First	Lona Das	CE	2nd
	Second	Moumita Das	CSE	2nd
	Third	Disha Sen	ECE	3rd
Potato Race (Girls)	First	Riya Mondal	CE	2nd
	Second	Ahana Bhattacharjee	CSE	3rd
	Third	Sonia Jana	ECE	4th
100 Meter Run (Girls)	First	Ahana Bhattacharjee	CSE	3rd
	Second	Sumana Hazra	ECE	3rd
	Third	Disha Mukherjee	CSE	1st
Balance Race (Girls)	First	Oiandrila Sarkar	CSE	1st
	Second	Manika Dutta	CSE	1st
	Third	Shreya Dey	ECE	3rd
High Jump (Boys)	First	Soumyajit Mondal	EE	3rd
	Second	Sandip Sikdar	ME	3rd
	Third	Susovan Murmu	ME	4th
Long Jump (Boys)	First	Tridib Kundu	EE	3rd
	Second	Sandip Sikdar	ME	3rd
	Third	Soumyajit Mondal	EE	3rd
Shot Put (Boys)	First	Debanik Chakraborty	ME	3rd
	Second	Sk Samsuddin	CSE	2nd
	Third	Nilimesh Ghosh	EE	3rd
300 Meter Run (Boys)	First	Debjyoti Pal	ECE	4th
	Second	Anujit Pal	ECE	1st
	Third	Nilimesh Ghosh	EE	3rd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SPORTS

INTER COLLEGE SPORTS MEET

1. Cricket team of HETC became Semi-finalist in the Inter College Cricket Tournament Organized by RCC Institute of Information Technology on 17th February, 2023.

2. Our college Cricket team won Inter College Cricket Tournament Rota-Sports 2023 Organized by MCKV Institute of Engineering held on 7th & 8th April, 2023.

3. Cricket Boys team of HETC secured runner up position in the Inter College Football Tournament Organized by MCKV Institute of Engineering held on 7-8 April, 2023.

SPORTS

Intra College Badminton (Girls Doubles) Tournament 2023

Reported By Mr. Dibyendu Samanta, Convener, Games and Sports Committee

Intra College Badminton (Girls Doubles) Tournament was organized by Hooghly Engineering & Technology College in the college playground on 19-20 December, 2023. The final match of the tournament was played on 20th December, 2023. More than 20 teams were participated in the tournament. The teams participated whole heartedly and played with full potential and respected the game.

- Winner Team: Shreya Mishra and Eshita Dey (Electronics and Communications Engineering 3rd Year)
- Runner Up : Sonamoni Jana and Anchita Das (Computer Science and Engineering 1st Year)

SPORTS

Intra College Cricket Tournament 2023

Reported By Mr. Dibyendu Samanta, Convener, Games and Sports Committee

Inter Department Cricket Tournament was held in the college playground on 19.12.2023 and 20.12.2023 with great zeal and excitement. Total 19 teams from different departments participated in this tournament. The final match of the tournament was played on 20th December, 2023. This year Civil Engineering 4th Year and Computer Science and Engineering 3rd Year became the champion and runners up respectively.

- Man of the Series: Abhik Banerjee (Computer Science and Engineering, 3rd Year)
- Man of the Match: Anubhav Mukherjee (Civil Engineering, 4th Year)
- Best Bowler: Keshav Kumar (Civil Engineering, 4th Year)
- Best Fielder: Anubhav Mukherjee (Civil Engineering, 4th Year)
- Best Batsman: Abhik Banerjee (Computer Science and Engineering, 3rd Year)

SPORTS

ANNUAL SPORTS MEET-2024

Reported By Mr. Dibyendu Samanta, Convener, Games and Sports Committee

The Engineering Curriculum demands dedicated and sustained efforts from every student. As a result, students remain busy with their studies throughout the year. Sports events are as important as academic activities and should receive equal importance because it helps in the mental and physical development of an individual.

Sports activities increase self-esteem, confidence, and mental alertness in an organic way. Realizing the importance of the sports and games in the overall development of the students, the Annual Sports Meet for Hooghly Engineering & Technology College was held on 13th January, 2024.

The enthusiastic & active participation of the students made the meet more colorful and happening. The boys' events included 300 Meter run, long jump, high jump and shot put. Events like 100 Meter run, balance race, potato race and musical chair were conducted for the girls' students. The meet was managed by professional sports officials. The winners of the various events were awarded with prizes and certificates.

The list of Prize winners is given below:

BOYS EVENTS				
Event Name	**Position**	**Name of the student**	**Department**	**Year**
300 Meter Run	First	Tushar Ghosh	CE	4th
	Second	Souradip Ghosh	CSE	2nd
	Third	Anujit Paul	ECE	2nd
Long Jump	First	Tridib Kundu	EE	4th
	Second	Krishnendu Das	CE	4th
	Third	Sk. Md. Hujaifa	CE	4th
Shot Put	First	Sk Samsuddin	CSE	3rd
	Second	Debanik Chakraborty	ME	4th
	Third	Sayar Paul	CSE	2nd
High Jump	First	Krishna Chandra Ghosh	CE	3rd
	Second	Krishnendu Das	CE	4th
	Third	Sourendra Mohan Pakira	CE	3rd

GIRLS EVENTS				
Event Name	**Position**	**Name**	**Department**	**Year**
Potato Race	**First**	**Ahana Bhattacharyya**	**CSE**	4th
	Second	**Priyanka Banerjee**	**CSE**	1st
	Third	**Prachi Snigh**	**ECE**	1st
100 Mt Run	**First**	**Priyanka Banerjee**	**CSE**	1st
	Second	**Disha Mukherjee**	**CSE**	2nd
	Third	**Alisha Khatun**	**CSE**	3rd
Balance Race	**First**	**Monami Sarkar**	**CSE**	2nd
	Second	**Pamela Pal**	**CSE**	3rd
	Third	**PurbitaKoley**	**CSE**	3rd
Musical Chair	**First**	**Tota Jana**	**CSE**	2nd
	Second	**NilanjanaBairagi**	**CSE**	3rd
	Third	**Srijani Soo**	**CSE**	3rd

TEACHERS' DAY CELEBRATION 2022

Reported by Vidita Mishra, Computer Science and Engineering , 3rd Year

On September 6, 2022, Hooghly Engineering & Technology College organized a grand celebration in honour of Teachers' Day. The event commenced at 11:00 AM in the college auditorium, marking a memorable tribute to the esteemed teachers and the founder, late Prof. Rupchand Pal, alongside paying homage to the renowned scholar Dr. Sarvepalli Radhakrishnan.

The ceremony commenced with the lighting of the lamp, symbolizing the enlightenment of knowledge, while invoking the blessings of Goddess Saraswati, the deity of learning.

The program proceeded with enlightening speeches by esteemed dignitaries, reflecting on the invaluable contribution of teachers to society.

The cultural extravaganza kicked off with an inaugural song, expressing heartfelt tributes and seeking blessings from the revered teachers. The ambiance was further elevated by soul-stirring melodies of the flute.

A poignant poem was recited by a participant, followed by a rendition of the iconic song "Maa," honouring the first teachers in our lives. The day resonated with various musical performances, leaving an indelible mark on everyone's hearts.

A touching moment unfolded when a former student, now a faculty member, graced the stage with a heartfelt performance, symbolizing the enduring bond between students and teachers.

Engaging activities like "Guess the Song" and "Sketch" added a playful element to the celebration, with prizes awarded to the winners. Additionally, heartfelt tokens of appreciation were presented to the beloved teachers, acknowledging their unwavering dedication.

The event witnessed captivating performances, including a gripping drama titled "Goru Churi," a dynamic hip-hop dance, and the nostalgic rendition of "Coffee House Er Adda." Another drama humorously depicted the daily college life, accentuating the role of teachers as guiding beacons.

A mesmerizing dance performance on "Monta Re" conveyed gratitude to the teachers for their guidance and support throughout the academic journey.

The program concluded with a series of musical performances, fostering an atmosphere of joy and camaraderie. The day culminated with a sumptuous feast sponsored by the students, symbolizing their deep respect and affection for their mentors.

The Teachers' Day celebration at Hooghly Engineering & Technology College was a resounding success, marked by heartfelt tributes, soulful performances, and expressions of gratitude. As an event organized entirely by the students, it exemplified the enduring bond between teachers and their pupils, fostering a spirit of unity and reverence within the college community.


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HAPPY
TEACHERS


HOOGHLY ENGINEERING AND TECHNOLOGY COLLEGE


HOOGHLY ENGINEERING AND TECHNOLOGY COLLEGE

TEACHERS' DAY CELEBRATION 2023

Reported by Swikriti Mondal, Computer Science and Engineering, 3rd Year

Teacher's Day is celebrated across the globe to honour the contributions of educators towards shaping the future generation. In line with this tradition, Hooghly Engineering & Technology College organized a grand Teacher's Day celebration on September 5, 2023 to pay tribute to the dedicated teachers who have been guiding and inspiring students.

The event commenced with a warm welcome speech by the host, setting the tone for the celebration and expressing gratitude to all the teachers for their relentless efforts. Following the welcome speech, a symbolic lamp lighting ceremony was conducted, signifying the enlightenment and wisdom imparted by teachers. Distinguished dignitaries graced the occasion with their presence and delivered inspiring speeches, acknowledging the invaluable role of teachers in society.

A heartfelt speech, expressing gratitude on behalf of the students was delivered. This segment also included the distribution of tokens of appreciation to the esteemed teachers.

A captivating welcome dance performance enthralled the audience, showcasing the cultural vibrancy of the occasion.

A poetic rendition mesmerized everyone, capturing the essence of mentorship and learning. Another one which was performed next, resonated with the audience, evoking emotions of gratitude and admiration towards teachers.

A series of musical performances further enriched the cultural mosaic of the event, celebrating the spirit of teaching and learning.

Few dance performances that were visual treats, showcasing elegance and grace enthralled the audience with their energy and expression, adding dynamism to the event.

Again, a melodious rendition captivated everyone, spreading joy and camaraderie. A duet performance added variety to the musical repertoire, celebrating the diversity of talents.

Theatrical performance entertained the audience with its wit and humour, while also conveying meaningful messages about the teaching profession. The drama performed by the 3rd year students were the most exciting part of the event.

Interactive games were organized, fostering camaraderie and team spirit among students and teachers alike.

A celebratory cake cutting ceremony marked the joyous occasion, symbolizing unity and togetherness.

A dance fusion showcased the rich cultural tapestry, spreading cheer and jubilation. Next, a group dance performance was high on energy and enthusiasm, showcasing talent and creativity. A lively and spirited dance performance kept the audience engaged and entertained.

The event concluded on a harmonious note with a group song, symbolizing unity and harmony among all participants.

The Teacher's Day celebration organized by Hooghly Engineering & Technology College was a resounding success, highlighting the invaluable contributions of teachers in nurturing young minds and shaping the future. The event not only showcased diverse talents but also fostered a sense of gratitude, respect, and appreciation towards educators. It served as a memorable tribute to the guiding lights who illuminate the path of knowledge and wisdom.


HAPPY TEACHERS DAY
"Thank you for being a great Teacher"

FAREWELL 2022

Reported by Vidita Mishra, Computer Science and Engineering, 3rd Year

On 2nd of July, 2022 the farewell ceremony for the 2022 batch was a heartfelt event, held in the auditorium and commencing at 11 am. The day was a blend of nostalgia, happiness, and laughter, interspersed with teary eyes as everyone bid goodbye and prepared to part ways to embark on new journeys. It was a poignant moment, filled with gratitude for our dear seniors, marking the time to cherish and pack away the memories of the past four years as they move forward towards a bright future, with the hope that their paths will cross again someday.

The program began with a lamp lighting ceremony, symbolizing the light of knowledge and wisdom, followed by an inaugural song that set a solemn yet celebratory tone for the event. Speeches from honourable guests and dignitaries provided inspiration and encouragement to the graduating seniors, acknowledging their achievements and contributions over the years.

Each senior was honoured with an HETC logo badge, a rose, and a memento as keepsakes from the college. These tokens served as a last gift and a reminder of the cherished moments spent on campus. The ceremony continued with a series of songs and dance performances by the junior students, showcasing their affection and respect for the outgoing batch.

Throughout the event, seniors were seen capturing moments, taking photos, and enjoying their time with friends, batchmates, and juniors. The atmosphere was filled with joy as they danced and tapped their feet to the beats, making the most of their last college celebration.

The program concluded with a few nostalgic songs, evoking memories and emotions, followed by the distribution of food packets and refreshments. This brought the farewell ceremony to a close, leaving everyone with a sense of fulfilment and a treasure trove of memories.

Thus, Farewell 2022 came to an end, marking a significant milestone in the lives of the graduating batch, as they step forward to embrace the future with hope and confidence.


HOOGHLY ENGINEERING & TECHNOLOGY
FAREWELL - 2022
OUR MEMORIES OF YESTERDAY
WILL LAST LIFE TIME.
WE WILL TAKE THE BEST,
FORGET THE REST
AND SOME DAY WILL FIND THAT
THESE ARE THE TIMES OF BEST.
WE ARE GONNA MISS YOUR
PRESENCE AND LEADERSHIP DOES
GOODLUCK AND BEST WISH


2022


HOOGHLY ENGINEERING & TECHNOLOGY COLLEGE

FAREWELL 2023

Reported by Vidita Mishra, Computer Science and Engineering, 3rd Year

The farewell program for the graduating batch of 2023 was held at the auditorium of HETC on 15/07/23. It was an emotional yet celebratory event organized by the college to bid adieu to the outgoing students and wish them success in their future endeavours. The program aimed to acknowledge the achievements of the graduating students and create a memorable experience for them as they prepared to step into the next phase of their lives.

The farewell program commenced with a lamp lighting ceremony, after which our respected College President Prof. (Dr.) Tarak Kumar Bandyopadhyay followed by Secretary Prof. (Dr.) Avijit Maity and our Principal, Prof. (Dr.) Pradosh Kumar Adhvaryyu delivered a heartfelt speech, expressing their pride in the graduating class and reminiscing about their journey through the college and also offered words of wisdom and encouragement for their future.

To add an element of joy and entertainment to the event, various cultural performances were arranged. Students from different batches showcased their talents through music, dance, and drama. The performances were a mix of nostalgia and merriment, evoking laughter and applause from the audience.

The function started with a beautiful opening folk song .

After this all the final year students were presented with a small token of love in the form of rose and memento by our honourable dignitaries.

The most amazing part of the event was the surprise element to honour some of the seniors by the juniors. This was followed by some emotional songs which was a last adieu to juniors by the passing out batch . Towards the end of the program the seniors were offered with famous delicacy of bengal and then all together that is both the juniors and seniors celebrated their bonds, emotional connects once again by taping their feats on their favourite songs . At last the program came to an end filling every one out there with mixed emotions of joy and nostalgia while they promised each other to meet again. teachers in nurturing young minds and shaping the future. The event not only showcased diverse talents but also fostered a sense of gratitude, respect, and appreciation towards educators. It served as a memorable tribute to the guiding lights who illuminate the path of knowledge and wisdom.


2023
FAREWELL-2K23


NGINEERING & TECHNOLOGY COLLEGE


ENGINEERING & TECHNOLOG


ECE

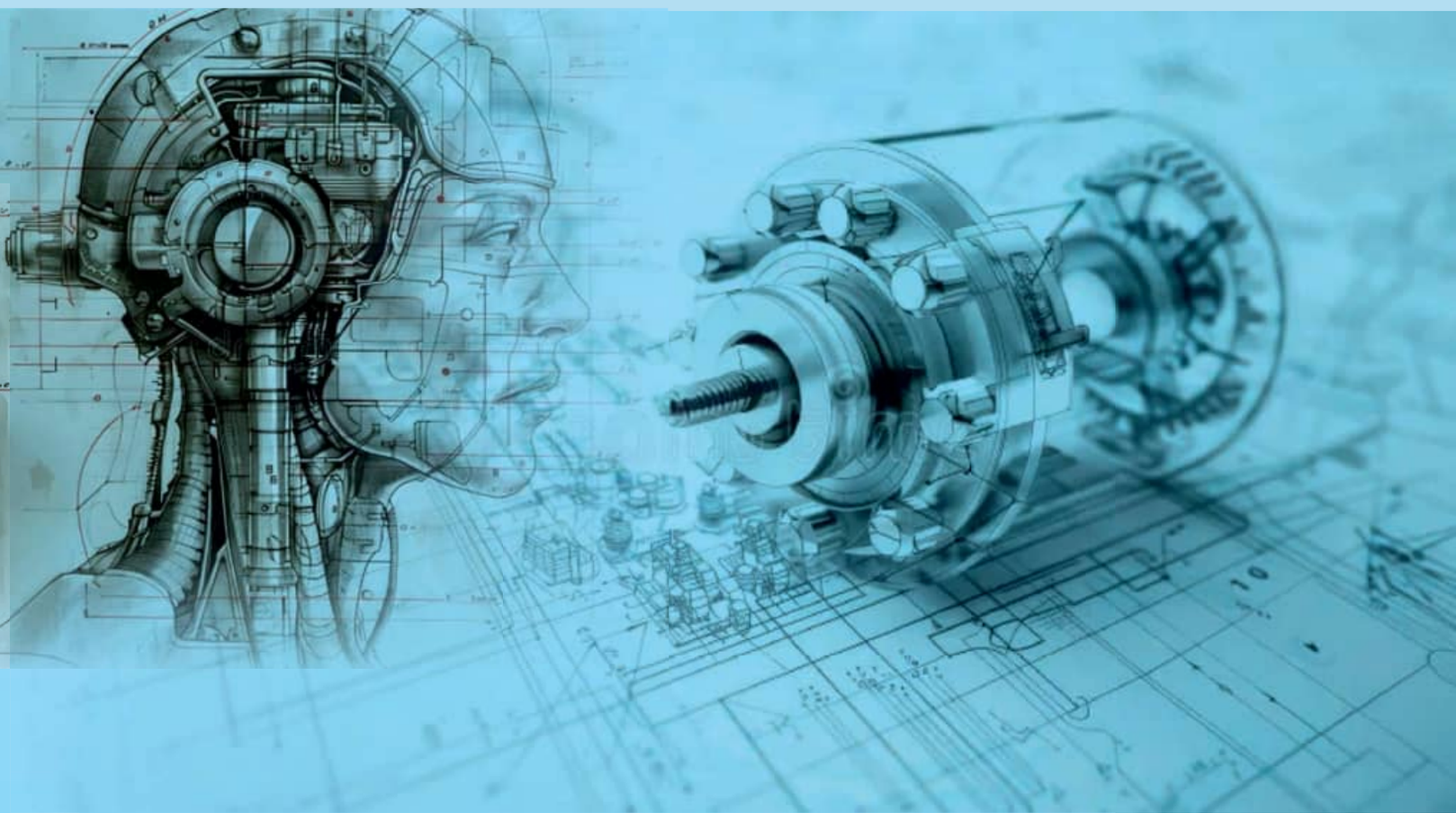
TECHetc 2023

Reported By Dr. Pratyay Debnath, Convener, TECHetc 2023

Technical fest always provides a wonderful opportunity to develop and showcase the technical prowess of the students. HETC conceptualized a state level annual technical fest named as "TECHetc" which bring along a plethora of various exciting technical, gaming & creative events.

HETC started a unique initiative 'TECHetc'- an annual state level technical fest in 2015 to promote technical education, a culture of innovation and general awareness about science and technology amongst school students as well as college students from nearby areas as well as other parts of the state. The fest features a variety of competitive events designed to attract students as well as to inspire them to do something different and original. This year, TECHetc 2K23 was held on 17-18th March 2023 within the college premises. In this Inter-College Technical Fest, more than 450 students participated from different institutes. 18 different competitive events were held during the two days.

TECHetc always dreams of thinking "one step ahead". Some of the interesting events of this year were HUNT FOR FUN and MATHMANIA. People those who opted for more specialization and hard-core technical events got their genres in "CODE-2-DUO", "CODE-RESTYLE", "ELECTROTECH-EXPLORATION", "INSTANT CIRCUIT", "insta-PLAN" and other technical events. Most attractive events were obviously the gaming events like CHESS, NFS, E-CARROM, COUNTER-STRIKE, INSTASNT CRICKET and 8 BALL- POOL. We also was conducted some of the popular and interesting events like, MODEL DISPLAY, BRIDGE THE GAP and ROBOZIGGER. The "backbone" behind the fest comprised of the Faculty and Staff members and also the 100 Student Volunteers, who were entrusted with the responsibility of conducting, planning and organizing the entire fest worked as team for the smooth sailing of the entire programme.



Name of the Event	Position	Name of the Winner(s)	Department	Name of the Institute
QUIZZARD	1st	Debarpan Mustafi	CSE	HETC
		Anujit Paul	ECE	HETC
	2nd	Tanisha Barman	Phycology	Asutosh College
		Anwesha Dhar	English	Hooghly Mohsin College
	3rd	Shreya Mishra	ECE	HETC
		Eshita Dey	ECE	HETC
HUNT FOR FUN	1st	Subhankar Pal	CE	HETC
		Subhamaya Sen	CE	HETC
		Shibom Mondal	CE	HETC
	2nd	Sourodip Ghosh	CSE	HETC
		Ankit Paramanick	CSE	HETC
		Devjyoti Banerjee	CSE	HETC
	3rd	Akash Verma	CSE	HETC
		Ayush Choudhary	CSE	HETC
		Souvik Maity	CSE	HETC
INSTANT CRICKET	1st	Debarpan Mustafi	CSE	HETC
	2nd	Debmalya Pathak	CSE	HETC
	3rd	Suprakash Roy	CSE	HETC
BRIDGE THE GAP	1st	Priya Shaw	CE	HETC
		Gitam Karmakar	CE	HETC
		Nabannya Hazra	CE	HETC
	1st	SinchanDatta	CE	HETC
		Jeet Chatterjee	CE	HETC
		ArunabhaRoy Chowdhury	CE	HETC
		ShrutilekhaJana	CE	HETC
	3rd	SouravJana	CE	HETC
		Raj Sadhukhan	CE	HETC
		SanjibanRudra	CE	HETC
		Biswajit Koley	CE	HETC
ELECTROTECH EXPLORATION	1st	Sampurna Pal	ECE	HETC
	2nd	Subham Das	ECE	HETC
	3rd	Ranjit Pathak	ECE	HETC
MODEL DISPLAY	1st	ArkapravaGangopadhyay	CE	HETC
		Srijita Chatterjee	CE	HETC
		Ankita Seal	CE	HETC
	2nd	Arunava Chaki	ECE	HETC
		Tiyasha Ghosh	ECE	HETC
		Foyjun De	ECE	HETC
		SusmitaSarnakar	ECE	HETC
	3rd	Sayantan Mallik	ECE	HETC
		SouravNandi	ECE	HETC
INSTANT CIRCUIT MAKING	1st	Priyatosh Patra	EE	HETC
		Somnath Roy	EE	HETC
	2nd	Bishnu Debnath	EE	HETC
		Subhadip Sebait	EE	HETC
	3rd	Sayan Adak	ECE	HETC
		Amit Kumar Bakshi	ECE	HETC
E-CARROM	1st	Spandan Bandyopadhyay	CSE	HETC
	2nd	Arnab Dutta	CE	HETC
	3rd	Samrat Adhikari	ME	HETC

MATHMANIA	1st	Nilimesh Ghosh	EE	HETC
	2nd	Tushar Atha	ME	HETC
	3rd	Sakshar Das	CSE	HETC
ROBOZIGGER	1st	Sayar Paul	CSE	HETC
		Anik Biswas	CSE	HETC
		Ayushman Paul	CSE	HETC
		Aryak Roy	CSE	HETC
	2nd	Srijan Chakraborty	CSE	HETC
		Rohit Sarkar	CSE	HETC
		Suprakash Roy	CSE	HETC
NFS	1st	Nirlendu Parui	CSE	HETC
	2nd	Soumyadeep Shaw	M.Com	CU
	3rd	Anubhab Palit	ECE	HETC
8 BALL POOL	1st	Utkarsh Abhishek	CSE	HETC
	2nd	Santanu Chatterjee	CSE	HETC
	3rd	Ayonendra Karmakar	CSE	HETC
CODE-2-DUO	1st	Sanghita Kundu	CSE	HETC
		Debmallya Pathak	CSE	HETC
	2nd	Soham De	CSE	HETC
		Piyali Ghosh	CSE	MCKV
	3rd	Shibam Mishra	ECE	HETC
		Arpan Biswas	ECE	HETC
EXTEMPORE	1st	Sakshsar Das	CSE	HETC
	2nd	Rupkatha Roy	CSE	HETC
	3rd	Bishal Chakraborty	CSE	HETC
CODE RESTYLE	1st	Adil Rahaman Molla	CSE	HETC
	2nd	Arkaprava Bhattacharyya	ECE	HETC
	3rd	Swikriti Mondal	CSE	HETC
CHESS	1st	Ronak Sarkar	Math (H)	Chandernagore College
	2nd	Aditya Paswan	CE	HETC
INSTA PLAN	1st	Krishnendu Das	CE	HETC
		Soumya Nath	CE	HETC
	2nd	Soham Chakrabarty	CE	HETC
		Arkaprava Gangopadhyay	CE	HETC
	3rd	Sourav Jana	CE	HETC
		Sanjiban Rudra	CE	HETC
COUNTER STRIKE	1st	Krishnandu Bhattacharya	CSE	HETC
		Srijan Chakraborty	CSE	HETC
		Rohit Patra	CSE	HETC
		Arkodip Das	CSE	HETC
		Subhrasmit Kar	CSE	HETC
	2nd	Keshav Kumar	CE	HETC
		Rajdeep Ghosh	CE	SVIST
		Sagnik Naskar	CE	HETC
		Subham Banerjee	CE	HETC
		Abhishek Chowdhury	CE	HETC
	3rd	Ayush Chowdhury	CSE	HETC
		Sankha Suvra Ghatak	CSE	HETC
		Kushal Ghosh	CSE	HETC
		Debopriyo Ganguly	CSE	HETC
		Arnab Sadhukhan	CSE	HETC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Hooghly Engineering & Technology College


BRIDGE THE GAP

REMEMBRANCE - 23 : ANNUAL ALUMNI MEET

Reported by Dr. Rajdip Paul, General Secretary, AAHETC

The Alumni Association of Hooghly Engineering & Technology College (AAHETC) organized a programme named as "REMEMBRANCE", an alumni meet to accelerate the Alumni Activities at HETC. The program was conducted successfully on Sunday, 29th January 2023. The main objective of the meeting was to interact with the alumni, plan future events, perform the Alumni Survey, take Alumni Feedback, etc.

The Remebrance-2023 started with welcome kit distribution at the registration desk from 10:30 a.m. and continued until 11:30 a.m. At 11 a.m. all are requested to gather in to the auditorium hall of HETC for Lamp Lighting Ceremony and welcome note. After that, our honourable president of HETCS and AAHETC Prof. T.K. Bandyopadhyay demonstrated his address on the alumnus role and the alumni's expectations of AAHETC. Dr. Smitadhi Ganguly, Principal in-Charge, HETC, and Chief Patron of AAHETC, wished the programme's grand success and gave a speech covering the purpose of the alumni meet. Prof. Avijit Maity, Secretary of HETCS and Patron of AAHETC, offered an encouraging address, including the vision and mission of the Association. He also asked the alumni to arrange seminars/workshops and guest lectures under the banner of AAHETC. This specches of dignatories continued till 11-30 a.m. After that, the anchor announced a short tea break.

AAHETC decided to appreciate the students from each department who achieved maximum DGPA in 2022-23 and also provide the financially weaker students with a one-time scholarship of Rupees 2000 (Two thousand only) per student for purchasing books. Twenty students achieved the prizes, and this award ceremony was celebrated between 11-30a.m. and 12-00 a.m. in the auditorium hall of HETC

After the prize distribution, some alumni shared their life journey after graduation and their views with the current 3rd and 4th-year students regarding professional life and how they handle challenging situations. They also gave some new ideas about how REMEMBRANCE will achieve grand success in the upcoming year. This conversation ended at 1:00 p.m.

Lunch break was announced at 1:00 p.m. The alumni took their lunch, gel in with each other, and walked around the college premises until 2:30 p.m. Then they were again requested to assemble at the auditorium to resume the program. After completing the launch break, the souvenirs are distributed to all the alumni present on that day. This memento distribution ends at 3.00 p.m. After that, Dr. Rajdip

Paul, General Secretary of AAHETC and HOD of the CE department, gave a vote of thanks from 3:00 p.m. to 3:15 p.m.

The reunion program ended with an energetic cultural program conducted by AAHETC with the band "The Shadows" from 3:15 p.m. to 4.30 p.m. all the alumni and current students participated in this cultural programme with complete energy. The event was stimulating, enjoyable, and simultaneously worthwhile as all members shared their views, and many new ideas, information, and insights emerged. The association is hopeful of running and successfully structuring and positioning itself into a fully functional global platform for HETC Alumni.

REMEMBRANCE - 24 : ANNUAL ALUMNI MEET

Reported by Dr. Rajdip Paul, General Secretary, AAHETC

Like every year, the Alumni Association of Hooghly Engineering & Technology College (AAHETC) organized a programme named "REMEMBRANCE". As discussed in the annual General meeting (AGM), REMEMBRANCE is conducted every year on the last Sunday of January. As per this, REMEMBRANCE 2024 was organised on Sunday, 28th January 2024. It is an alumni meet to accelerate the Alumni Activities at HETC.

The main objective of the meeting was to interact with the alumni, plan future events, perform the Alumni Survey, take Alumni Feedback, etc. The Remebrance-2024 was started with welcome kit distribution at the registration desk from 10:30 a.m. and continued until 11:30 a.m. At 11 a.m. all are requested to gather in to the auditorium hall of HETC for Lamp Lighting Ceremony and welcome note.

After that, our honourable president of HETCS and AAHETC Prof. T.K. Bandyopadhyay demonstrated his address on the alumnus role and the alumni's expectations of AAHETC. Dr. Smitadhi Ganguly, Principal in-Charge, HETC, and Chief Patron of AAHETC, wished the programme's grand success and gave a speech covering the purpose of the alumni meet. Prof. Avijit Maity, Secretary of HETCS and Patron of AAHETC, offered an encouraging address, including the vision and mission of the Association. He also asked the alumni to arrange seminars/workshops and guest lectures under the banner of AAHETC. Dr. Rajdip Paul, Secretary of AAHETC and Assistant Professor of Cental University of Jharkhand, briefly describe the history of alumni association from the beginning and also clarified the role of alumni of HETC. A tea break was announced after this session at 11: 30 a.m.

Like the previous year, AAHETC also appreciated a token prize of ten students for remarkable results throughout the four-year journey in 2023-24. The financially weaker ten students also get a one-time scholarship of Rupees 2000 (Two thousand only) per student for purchasing books. It started at 11-30a.m. and continued until noon. The dignitaries of the dias delivered the prize to every student. After the prize distribution, some alumni shared their life journey after graduation and their views with the current 3rd and 4th-year students regarding professional life and how they handle challenging situations. They also gave some new ideas about how REMEMBRANCE will achieve grand success in the upcoming year. This conversation ended at 1:00 p.m.

SCHOOL CARNIVAL - 2022 : ANNUAL SCHOOL CONNECT PROGRAMME

Reported by Mrs. Sreyasi Rupa De, Convenor, School Carnival Committee

Hooghly Engineering & Technology College (HETC), in its 18th year of excellence, organized its first-ever school connect program, "School Carnival 2K22". The vibrant and memorable day-long event was held on 12th November 2022 at the HETC campus in Hooghly.

The carnival came to life at 10:30 a.m. with the inauguration ceremony graced by the Hon'ble President of HETCS, Dr. T. K. Bandyopadhyay, Hon'ble Secretary, Dr. Avijit Maity, and Principal in-Charge, Dr. Smitadhi Ganguly.

The event received an overwhelming response from students of Class 6 to Class 12, with around 400 students participating in various competitions from districts including Hooghly, Howrah, Burdwan, Kolkata, Bankura, and North & South 24 Parganas.

The carnival featured a variety of engaging and colourful sub-events, such as Sit & Draw, Cricket, Quiz, Extempore, Chess, Fun Science, and Mathmania (for both junior and senior categories). The Cricket tournament attracted 19 groups, making it a mega event, while the Chess competition saw participation from over 100 students.

The carnival created a festive atmosphere, attracting teachers, guardians, and well-wishers from various schools who gathered to cheer for the participants. The event was covered by local media, and the highlights were published in the "Bartaman" newspaper on 15th November 2022.

The grand event concluded around 6:30 p.m. with a joyous prize distribution ceremony. Winners received certificates of appreciation and trophies, while all participants were awarded participation certificates as a token of encouragement.

The School Carnival 2K22 left everyone with unforgettable memories. The event provided a platform for school students to showcase their talents, and the enthusiastic appreciation from teachers, participants, and guardians made the day truly special. The memories of this grand event will remain cherished by everyone present.

On behalf of the Convener's Desk, I extend heartfelt congratulations to the Management, Joint Convener, Core Members, Volunteers, as well as the Teaching and Non-Teaching Staff Members of HETC, and all the Students and Stakeholders for their wholehearted support in making School Carnival 2K22 a grand success.

SCHOOL CARNIVAL 2022









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Reported by Mrs. Sreyasi Rupa De, Convener, School Carnival Committee

Hooghly Engineering & Technology College (HETC), in its 19th year of excellence, organized the much-anticipated School Carnival 2023 on 25th November 2023 at its campus in Hooghly. The event featured a wide range of dynamic activities aimed at igniting the competitive spirit among young minds. Students from various schools participated with great enthusiasm, making the carnival a grand success.

As is tradition, the School Carnival is conducted annually by the first-year students. This year, the program was inaugurated at 10:00 a.m. by the Hon'ble MLA of Chinsurah Constituency, Sri Asit Mazumdar, along with Dr. T. K. Bandyopadhyay, President, HETCS; Dr. Avijit Maity, Secretary, HETCS; and Dr. Smitadhi Ganguly, Principal in-Charge, HETC.

Students from various districts, including Hooghly, Howrah, Burdwan, Kolkata, Bankura, North & South 24 Parganas, Malda, Purulia, and Purba Medinipur, participated in a variety of competitions. The entire college wore a festive look as students engaged in fun-filled activities such as games, cultural events, competitions, and food stalls, creating a vibrant and lively atmosphere.

The School Carnival has become a symbol of cultural celebration at HETC, providing a platform for school students to showcase their talents and interact with peers from different regions. The events were judged by experts from various fields, ensuring fair evaluation and recognition of talent. A large number of enthusiastic teachers, guardians, and well-wishers gathered throughout the day to cheer for the students.

The festive journey concluded with a delightful Prize Distribution Ceremony, where the Guest of Honor, Smt. Smita Sanyal Shukla, SDO Sadar, Hooghly, graced the event. The winners received certificates of appreciation and trophies, while all participants were awarded participation certificates as a token of encouragement.

The event garnered media attention and was featured in the Bartaman newspaper on 28th November 2023, capturing the grand moments of the carnival.

On behalf of the School Carnival 2023 Convener's desk, I extend heartfelt congratulations to the Management, Joint Convener, all Committee Members, Volunteers, as well as the Teaching and Non-Teaching Staff Members of HETC, and all the Students and Stakeholders for their unwavering support in making this mega event a resounding success.

SCHOOL CARNIVAL 2023

PHOTOGRAPHY COMPETITION

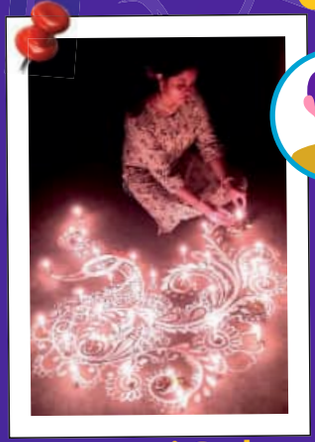
1st

Anujit Paul
ECE, 2nd Year

2nd

Mounodeep Dey
CE, 2nd Year

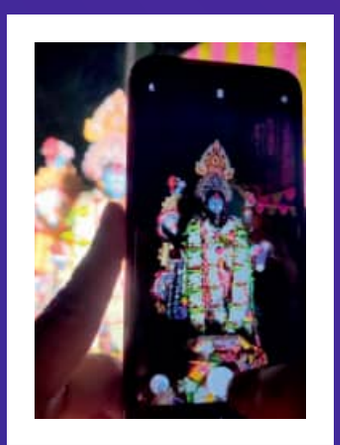
3rd



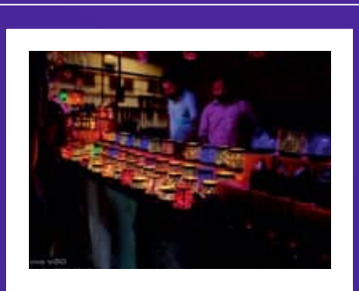
Monami Sarkar
CSE, 2nd Year

Shubham Das
ECE, 3rd Year

Honorable Mentions

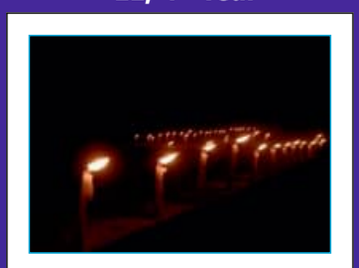


Joly Kole
CE, 4th Year



Rupan Biswas
EE, 4th Year

Shubhashree Ghosh
ECE, 2nd Year

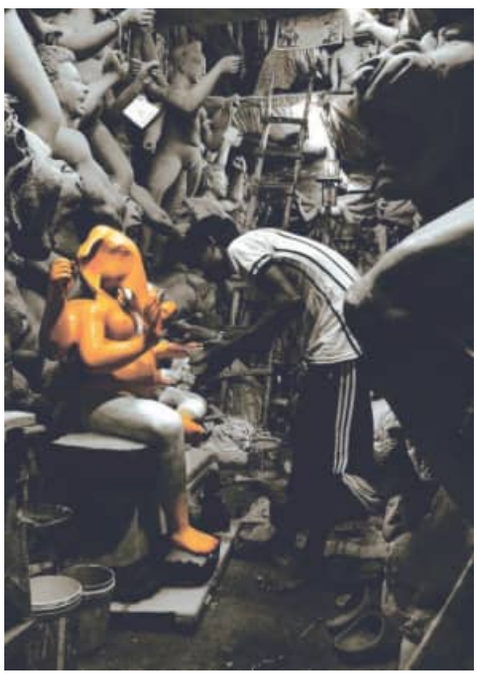


Sagnik Datta Mazumdar
ECE, 1st Year

FROZEN MOMENT

Samata Das
CE, 3rd Year

Ratul Debnath
CE, 2nd Year



Ayushman Pal
CSE, 2nd Year

Krishnendu Adak
CE, 2nd Year

Snigdha Ghoshal
CE, 3rd Year

Samata Das
CE, 3rd Year

Krishnendu Adak
CE, 2nd Year

Soham Chakraborty
CE, 3rd Year

Soumyadeep Bandyo
CE, 3rd Year

Krishnendu Adak
CE, 2nd Year

Sarit Kundu
CE, 4th Year

Sarit Kundu
CE, 4th Year

Sarit Kundu
CE, 4th Year

Sayar Paul
CSE, 2nd Year

Sayar Paul
CSE, 2nd Year

Sayar Paul
CSE, 2nd Year

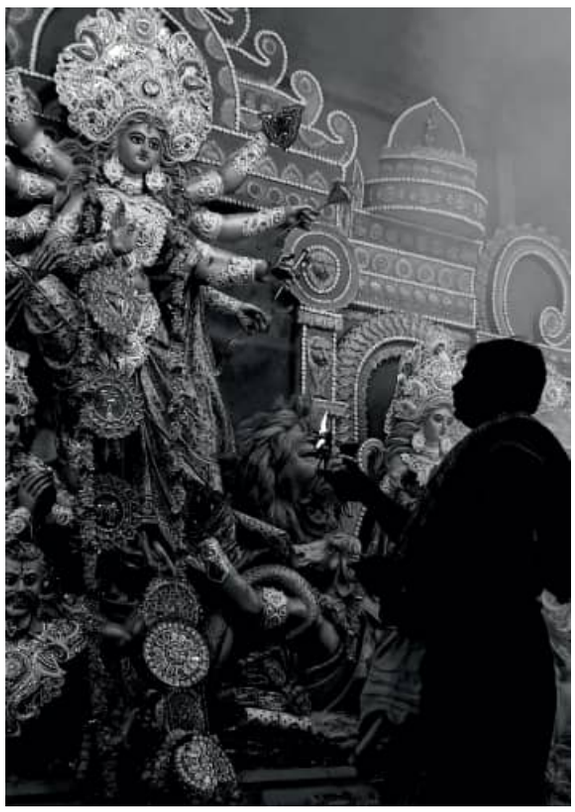
Swastik Roy
CSE, 3rd Year

Sagnik Goswami
CSE, 4th Year

Arpita Dutta
ECE, 3rd Year

Swastik Roy
CSE, 3rd Year

Souvik Barik
ECE, 2nd Year



Swastik Roy
CSE, 3rd Year

Arya Biswas
EE, 1st Year

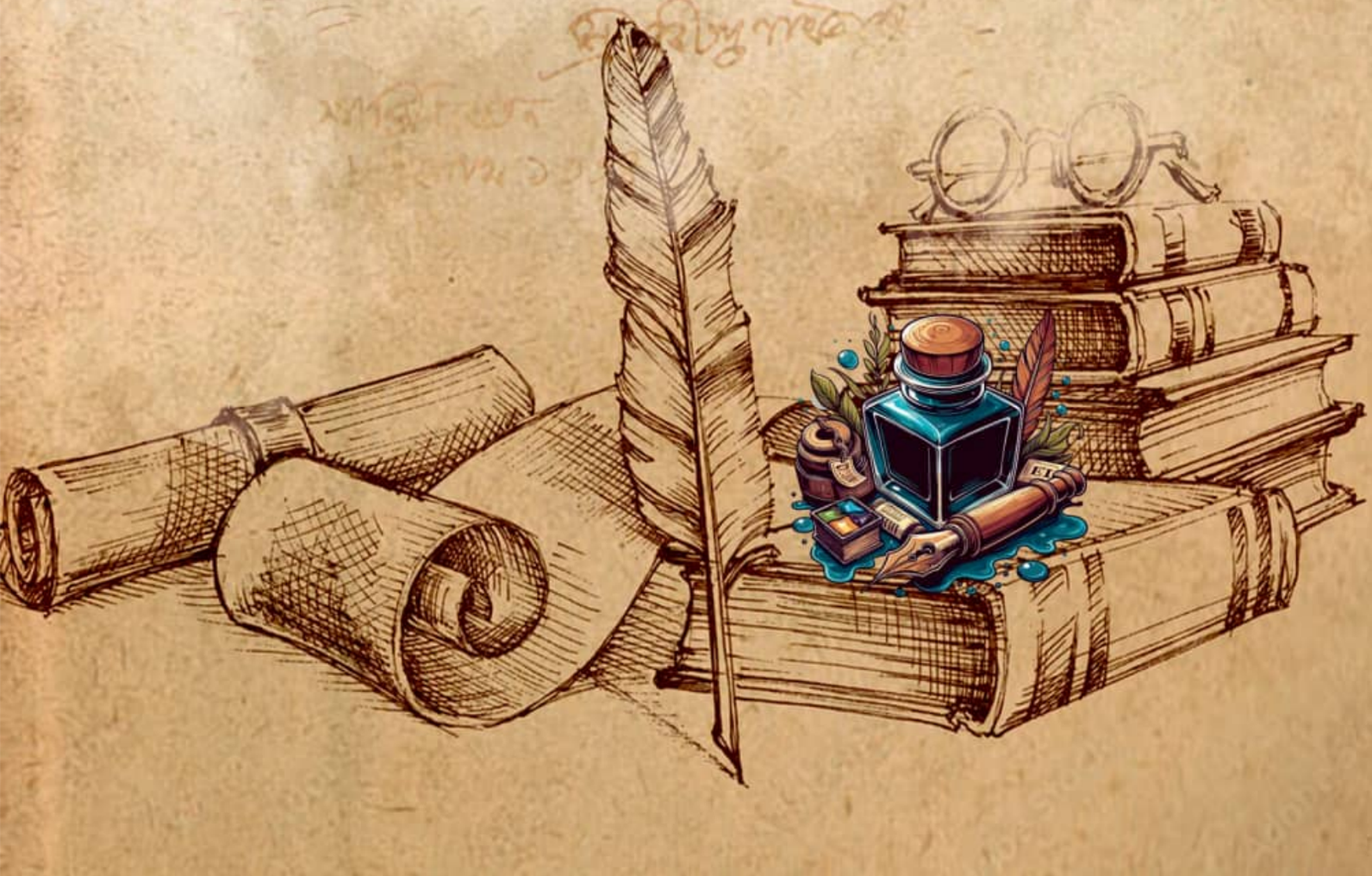
Sagen Murmu
ME, 3rd Year

Sagen Murmu
ME, 3rd Year

Pradipta Seth
EE, 1st Year

Arpita Dutta
ECE, 3rd Year

কাব্যের বর্ম



বিচার

বুঝিনা মানুষ কেন করে মারামারি!
সুস্থ জীবনের জন্য শান্তি দরকারি।

জানিনা মানুষ কেন করে অহংকার!
মনুষ্যজীবনে এতো নয় অলংকার।

জানিনা কেনো মানুষ করে রাগারাগি!
দুরারোগ্য জীবনে কেবা তার ভাগী।

জানিনা কেনো মানুষ করে আত্মসাৎ!
আত্মসম্মানে মোরা হব কুপোকাত।

জানিনা কেনো মানুষ করে অপকার!
নাহি রবে সমবেদনা, পাবে তিরস্কার।

জানিনা কেনো মানুষ করে এত হিংসা!
ধারিবে বেদনা আরও, বাড়িবে ঈর্ষা।

জানিনা কেনো মানুষ করে হানা হানি!
সম্মান যাবে সবে, নেই মানা মানি।

জানিনা কেনো মানুষ করে এত পাপ!
সর্ব মূল্যায়নে তুমি পাবে অভিশাপ।

জানিনা কেনো মানুষ মানুষকে ঠকায়!
জীবনের অঙ্কে উত্তর রবে শূন্যটায়।

জানিনা কেনো মানুষ করে মানুষের ক্ষতি।
সর্বক্ষয় শেষ সম্বল, রইবেনা একরতি।

রাজীব কুমার মন্ডল
অ্যাসিস্ট্যান্ট প্রফেসর, মেকানিকাল ইঞ্জিনিয়ারিং

মনের যুদ্ধ

কুরুক্ষেত্রে শঙ্খনাদ, পার্থ গাণ্ডীব হাতে।
হঠাৎ আবেগপ্রবণ হয়ে পড়ল বসে রথে।
মাধব বললেন, এতদূর এসে ভেঙে পড়া কি সাজে?
ছুটিয়ে ঘোড়া, রথ নিয়ে গেল যুদ্ধক্ষেত্র মাঝে।
এক এক করে আত্মীয়দের মুখগুলো তাঁকে দেখায়।
কুরুক্ষেত্র কথাটির, আসল অর্থ বোঝায়।
করণীয় যা যেই ক্ষেত্রে, করতে হবেই পার্থ।
অন্যায়ের আজ অবসান করো, দেখাও সামর্থ্য।
যুদ্ধক্ষেত্রে কিভাবে বধ করি আপনদের?
তাদের শবে চড়ে রাজ, হবে কি সুখের?
ধর্ম বলে, ফল ভুলে কর্মটুকু করো।
অধর্মের উৎখাতে আজ গাণ্ডীব তুলে ধরো।
বুঝলো পার্থ কর্ম নিজের, অস্ত্র নিল হাতে।
যুদ্ধ অপর কারো নয়, কেবল নিজের সাথে।

অন্তিক ভট্টাচার্য
কম্পিউটার সায়েন্স এ্যান্ড ইঞ্জিনিয়ারিং, চতুর্থ বর্ষ

দীপমালা

তোর জন্য নিদ্রা বিহীন রাত্রি জেগে,
পলে পলে, দণ্ডে দণ্ডে প্রহর গুনি।
স্থবির শরীর, ছোটে তবু আমার এ মন।
সেই হৃদয়ের ভাঙা গড়ার শব্দ শুনি।

জানি, আমি এই মুহূর্তে বাড়ালে হাত,
স্পর্শ যে তোর পাবনা মোর বুকের মাঝে।
প্রতীক্ষা তে থমকে থাকা সময়ে তাই,
অট্টহাস্যে মহাকালের ঘন্টা বাজে।

ইচ্ছে যে হয় তোর কাছেতে এখনই যাই,
ভরিয়ে তুলি এখন তোকে খুব আদরে।
পরিস্থিতির শিকল বাঁধা ইচ্ছে ডানা,
গোপনে তাই হৃদয় থেকে রক্ত ঝরে।

তোর জন্য মন খারাপের ধূসর পাতা,
জমিয়ে রাখবো অনুভূতির সাদা খামে।
মন উদাসী সর্বনাশী একলা ক্ষণে,
খামটা খুলে দেখবো কত বৃষ্টি নামে।

রামধনু যেই বলবে আমায়- "একটু হাসো"।
মনটা আবার গুছিয়ে নেবার আসবে পালা।
দেখবো যে চেয়ে অনুভবের আকাশ জুড়ে,
জ্বলছে আবার লক্ষ তারার দীপমালা।

দেবাশিষ বসু
সিনিয়র টেকনিক্যাল অ্যাসিস্ট্যান্ট ,ইলেকট্রিক্যাল ইঞ্জিনিয়ারিং

মোদের বিশ্ব বিবেকানন্দ

বিশ্ব বিবেকানন্দ তুমি স্মরি তব নাম,
শিকাগো সম্মেলনে ভারতবর্ষের নাম প্রজ্জ্বলিত করে,
রেখেছো মোদের মান।
১২ জানুয়ারি জন্মদিনে জ্বলছে তব আলো,
মোরা ভারতবাসী সবারে কহি, প্রাণের প্রদীপ জ্বালো।
পূণ্য ভূমিতে মোরা পেয়েছি তোমায় হে বীর সন্ন্যাসী,
গর্ববোধ করি মোরা, বিশ্বকে এ কথাটি বলি।
মানব সেবাই পরম ধর্ম মানুষই ভগবান,
তুমি করে গিয়েছো মোদের এই মন্ত্র দান।
আশীর্বাদ কর মোদের যেন চলতে পারি তোমার দেখানো পথে,
হে বিশ্ব বিবেকানন্দ তুমি নিওগো প্রণাম, আমার হৃদয়ের অন্তস্থল থেকে।

সুদীপ্ত মন্ডল
ইলেক্ট্রনিক্স এ্যান্ড কমিউনিকেশনস্ ইঞ্জিনিয়ারিং, তৃতীয় বর্ষ

লালবাড়ি

এক যে ছিল নদীর পাশে ছোট্ট এক গ্রাম
ইতিহাসের পাতায় তার ছিল না তেমন দাম,
তারি মাঝে সেথায় ছিল পেল্লায় এক বাড়ি
বিঘে বিঘে ফসল তাদের মস্ত জমিদারি;
ঘোড়ার গাড়ি ছিল তাদের, আর ছিল সহিস
গোয়াল ভরা গরু ছিল, সাথে ছিল মহিষ;
মেজবাবু, সেজবাবু ভালোই ছিলেন ভারী
বড় বাবু-ই রেগে গিয়ে করতেন বাড়াবাড়ি...
সকালেতে দেখেন বাগান, আলসে ধরে ছাদের,
গাঁয়ের সব লোকই একটু সমঝে চলত তাদের;
অন্দরমহলটি ছিল গিন্নিদেরই হাতে
ভালো-মন্দ সব পদ রাঁধত দিনে রাতে!
কুলদেবতা ছিল তাদের সত্যনারায়ণ
সন্ধ্যেবেলায় ঠাকুরমশাই পড়তেন রামায়ণ;
মেয়ে বউরা সারা বছর রাখত নানান ব্রত,
লেখাপড়া থেকে তারা থাকতো যে বিরত;
সাহেব-সুবো আসতো হেথা চড়ে জুড়িগাড়ি।
গাঁয়ের লোকের কাছে তাই ইহা ছিল 'লালবাড়ি'
দেশে তখন লেগেছে সবে বিদ্রোহের হাওয়া,
তবে সে দিক পানে লাল বাড়ির ছিল নাকো যাওয়া;
সিন্দুকেতে গয়না আর অঢেল ছিল টাকা!
তবে দীর্ঘ সময় লক্ষ্মী দেবীর হল নাকো থাকা;
কালের গ্রাসে সবই তো গেল একদিন চলে,
লালবাড়ির আকাশে সূর্য পড়ল যে ঢলে;
দেশ যেই হলো স্বাধীন, গেল জমিদারি,
রইল না আর ফসল, রইল না আর গাড়ি
তবে গাঁয়ের গত দু-শতকে ঘুরেছে ভাগ্যের চাকা
নানা দেশের ব্যবসায়ী হেথা শুরু করেছে থাকা;
কারখানাতে গাঁয়ের এখন বেড়েছে ভালোই বহর
গ্রাম ছেড়ে এখন সেটি ভালই বড় শহর;
সেই শহরের মাঝে রেল চলে আঁকাবাঁকা

রাজ মুখার্জী
সিভিল ইঞ্জিনিয়ারিং, চতুর্থ বর্ষ

আমার মা

আমার মন খারাপের দিনে, সর্বক্ষণের সঙ্গী তুমি মা।
প্রতিদিনের অভ্যাসে, একঘেয়ে দিন শেষে,
তোমাকেই চাই মা।
ক্লান্ত শরীর, দিক ভ্রান্ত চারিদিক
তখনও তোমাকেই খুঁজি মা।
যতই বড় হই না কেন
আজও তোমার ছায়ায় বাঁচি মা।
জীবনের প্রথম স্পর্শ, প্রথম পাওয়া,
প্রথম দেখা, প্রথম ভালোবাসা
সবই তুমি মা।
হাজার দুঃখে যাকে জড়িয়ে মন খুলে কাঁদা যায়
সেও তুমি মা।
আমার সব আনন্দ, দুঃখ, কষ্ট, ভালোলাগার
সবচেয়ে কাছের সঙ্গী তুমি মা।
হৃদয়ের অন্তঃস্থল থেকে ঈশ্বরের কাছে একটাই প্রার্থনা
প্রতি জন্মে তুমিই হও আমার মা।

সায়নী সাহা
ইলেক্ট্রনিক্স এ্যান্ড কমিউনিকেশনস্ ইঞ্জিনিয়ারিং, তৃতীয় বর্ষ

মধ্যবিত্ত অপেক্ষা

স্কুলে পড়ার সময় মনে হয়-
স্কুলের গন্ডি পেরোলেই জীবনের সব মজা!

কলেজে গিয়ে মনে হয়
একটা চাকরি পেলেই ব্যাস!
জীবনের সব সমস্যার সমাধান।

এরপর অফিসে গিয়ে শুরু হয় বিস্তর হিসাব- নিকাশ-
একটা প্রমোশন, ভালো বউ, নতুন ফ্ল্যাট, ফুটফুটে বাচ্চা,
আরো কত কী ....

একদিন সব পেয়ে যাওয়ার পর মনে হয়-
চল্লিশের পরেই তো আসল জীবন!
জীবনের সব বাধা পেরিয়ে,
তখনই তো অশ্বমেধের ঘোড়া ছোটানোর আসল সময়!

চল্লিশে এসে মনে হয়, একটু থমকে যাওয়া যাক,
আর কিছুদিন জমা- খরচ দিতে দিতেই না হয় থমকে চলুক সময়....

ষাটের দোরগোড়ায় এসে মনে হয়... আর কী!
এবার মুক্তি!
চাকরি -বাকরি চুকিয়ে; অবসর নিয়ে
বুড়ো-বুড়ি মিলে বেরিয়ে পড়া যাক তবে!

এতসব ভাবতে ভাবতে
কখন যে অশীতিপর বৃদ্ধদের ধাপিতে এসে বসেছে জীবন,
তার খেয়াল নেই।
মনে হয়, এবার বরং চলে গেলেই ভালো হয়।

আসলে কেউ ভালো থাকেনি কোনও দিন-
সবাই শুধু ভালো থাকার অপেক্ষায় দিন গুনছে!

ডঃ শুভম গাঙ্গুলী
অ্যাসিস্ট্যান্ট প্রফেসর, বেসিক সায়েন্স এ্যান্ড হিউম্যানিটিজ

একটু আশা

তুমি সবই পারবে
চেষ্টা করে তো দেখো
ভুল হয়ে গেলে না হয়
ভুল থেকেই শেখো।
লক্ষ্য স্থির রেখে চলো
সোজা পথ ধরে,
বোলো না করবে পরে।
রাত পেরিয়ে ভোর আসবেই
এ তো সবারই জানা
আকাশটা যে কতো বড়
এবার মেলো ডানা।
দুঃস্বপ্নগুলো ভুলে যাও
আর পেও না ভয়
দেখো খুঁজে পাবেই তুমি
নূতন পরিচয়।
বিপদ তো আসবেই
ছেড়োনা তবু হাল
আজ টাকে পেরোলে
তবেই তো আসবে কাল।
স্বপ্ন কে বেঁধে না রেখে
করো তাদের পূরণ
অতীতকে ভুলে যাও এবার
এসে গেছে যে নূতন।
একবার হেসে দেখো
সব খুশী তোমার হবে
খুশীর কাছে তো গিয়ে দেখ
তবেই তো খুশী খুঁজে পাবে।
সবশেষে থাকলো যা বলার
একটু আশার যে
অনেকটাই দরকার।

অর্পিতা দত্ত
ইলেক্ট্রনিক্স এ্যান্ড কমিউনিকেশনস্ ইঞ্জিনিয়ারিং, তৃতীয় বর্ষ

আজব রাজনীতি

ভোট দিন, ভোট দিন দাদা
এবার ভোটে জিতলে রাস্তায় হবে না কাদা,
আসে বিভিন্ন প্রতিশ্রুতি নেতাদের কাছ থেকে,
মূর্খ জনগণ আমরা বিশ্বাস করি প্রতিবারে।
ভোট আসে, ভোট যায়
গঠিত হয় মন্ত্রিসভা, নির্বাচিত হয় মন্ত্রী
কিন্তু আমরা জনগণ আজও অপেক্ষায় সেই প্রতিশ্রুতির!
বাড়ছে বেকারত্ব, বাড়ছে দারিদ্র, বাড়ছে শিশু শ্রমিকের সংখ্যা
অন্যদিকে বেড়ে চলেছে বিলাস বহুল নেতাদের বিলাসিতা।
কাকে করবো দোষী? কি হবে প্রতিকার?
নিজেরাই যখন আজব রাজনীতির শিকার!

সুদীপ্ত মন্ডল
ইলেক্ট্রনিক্স এ্যান্ড কমিউনিকেশনস্ ইঞ্জিনিয়ারিং, তৃতীয় বর্ষ

নাম

হাসপাতালে ছোট্ট শিশু
যখন প্রথম দেখল আলো,
কান্নার সুরে জানান দিল
আছি আমি ভালো।
ছোট্ট শিশুর কান্না শুনে,
ফুটল হাসি বাড়ির লোকের মুখে,
বড় হয়ে কি হবে?
সেই ভাবনা এখন সকলের বুকে।
বাবা বলেন, ছেলে আমার সোনার চাঁদ
হবে মস্ত বড় ডাক্তার
মা বলেন, ছোট্ট ছেলে আমার,
হবে প্রাইমারি মাস্টার।
কাকা বলেন ভাইপো আমার
হবে মস্ত ইঞ্জিনিয়ার
বড় বড় বিল্ডিং বানাবে,
নাম কামাবে দুনিয়ার।
পিসি বলেন ভাইপো আমার
হবে ব্যারিস্টার,
এখন তো সবাই হচ্ছে
ডাক্তার আর ইঞ্জিনিয়ার।
ছোট্ট শিশু শুয়ে শুয়ে
করুণ চোখে তাকায়,
মনে মনে বলছে সকলকে,
আগে একটা "নাম" দাও আমায়।

অমিত মন্ডল
ইলেক্ট্রনিক্স এ্যান্ড কমিউনিকেশনস্ ইঞ্জিনিয়ারিং, তৃতীয় বর্ষ

পিরিতি রীতি

দুই মনের মাঝে বেচাকেনা
তার মাঝেতে লাভ দু-আনা
এক আনাতে দিন চলে যায়
আর এক আনায় রাত খানা।
দেহ পিরিত সাজে সাজলি ও মন
পিরিত আয়নায় দেখলি না।।
এই জমিদারি নায়েব খোঁজে
একজনে লাভ ক্ষতি বোঝে
আরেক জনের খেয়াল খুশি
রাখবে বলো কোন জনা?
দেহ পিরিত সাজে সাজলি ও মন-
পিরিত আয়নায় দেখলি না।।
ও কে ডাকলো সুরে চাতক ছলে
সে মেঘ গেল অতল তলে,
মোহের শাপে লাগলো খরা
শুকনো ডানা ভিজলো না।
দেহ পিরিত সাজে সাজলি ও মন-
পিরিত আয়নায় দেখলি না।

সুমন মণ্ডল
সিভিল ইঞ্জিনিয়ারিং, তৃতীয় বর্ষ

শকাব্দ

একটি ফিকে হওয়া বিকেল
এবং তোমাকে দূরে সরাতে গিয়ে,
নিষ্ঠুর জলদেশের মতো
আমি ডুবে ভেসে থাকি।
জেদি বালকের
দুঃখের স্বপ্ন ভঙ্গের মতো,
ঘুম আসে।
আমি তাকে আলিঙ্গন করি।
যেমন ভাবে পূর্ণ কলসি
জলে ডুবতে ডুবতে
ভরা যৌবন বিসর্জন দেয়,
আমি মরতে মরতে বেঁচে উঠি।

পামেলা পাল
কম্পিউটার সায়েন্স এ্যান্ড ইঞ্জিনিয়ারিং, তৃতীয় বর্ষ

চরম বাস্তব

ভোরে যখন সূর্য হাসে সকাল হলো ভেবে....
আঁধার তখন দুঃখ করে রাত্রি এবার যাবে।
সূর্য যেথায় সোনার বরণ কোটিপতির ছেলে,
রাত্রির সেথায় গরিব বড় বাবা যে তার জেলে।
সূর্য শুধু স্বপ্ন দেখে চাকরি আর ব্যবসার
রাত্রি চোখে ঘুম নাই ঘরে নাই খাবার।
রাত্রির ঘরে খড়ের চালে বৃষ্টি পড়ে ঝেঁপে;
শীতের রাতে ছেঁড়া কাঁথায় সর্বাঙ্গ কাঁপে।
সূর্যর বাবা মহাজন, তার সুদের কারবার...
রাত্রিদেরকে দিয়েছিলেন হাজার টাকা ধার।
ধান বাঁচাতে কীটনাশক নদীর জলে মেশে...
জেলের ঘরে মাছ আসেনি, মরা মাছ উঠছে ভেসে।
ধারের চোটে বাড়িঘর পড়লো যে সব বাঁধা...
রাত্রির বাবা সাফ করছে মরা মাছের গাদা।
সূর্য আজ বিলাত যাবে, শুরু হলো পড়ার দিন....
রাত্রিরা সব গ্রাম ছেড়েছে সাথে অনেক টাকার ঋণ।

মনামি সরকার
কম্পিউটার সায়েন্স এ্যান্ড ইঞ্জিনিয়ারিং, দ্বিতীয় বর্ষ

অসফলতা

ভুলের রঙে রঙিন তুমি, জীবনের এই চিত্র,
অসফলতা নয়কো শেষ, নতুন করে শুরু করো বৎস্য।
সূর্যের প্রথম সেই রঙ, তা যেন কোথায় গিয়েছে,
আকাশের অনেক বছর, ভুলের মেঘে যেন ছুঁয়েছে।
জীবনের পথ হবে কঠিন, আসবে বিপত্তি, হেরে যাওয়াটাই সামান্য,
কিন্তু মনে রাখবে অসফলতাই তোমাকে সাহায্য করে গল্পের সূচনা করতে।
বিজয় হয়ে উঠবে সেদিন, ব্যর্থতার কারণ যেদিন জানবে,
মেঘের পাড়ে রঙিন ইতিহাস, শুরু হবে এক নতুন অধ্যায়ের।
অসফলতা যেমন একটি ছোঁয়া, হারের পেছনে চমক রেখে যায়,
বিজয় তেমন তোমার কাছ থেকে পরিশ্রম দেখতে চায়।
অসফলতা পেলেও মুখে থাকে যেন জয়ের আলোর হাসি,
মনে রাখবে চিরকাল শোকের পরে আসে নিঝুম বৃষ্টি।

সৌভিক মাইতি
কম্পিউটার সায়েন্স এ্যান্ড ইঞ্জিনিয়ারিং, দ্বিতীয় বর্ষ

বইমেলা মানে

বইমেলা মানে অন্য আবেগ,
সবার মুখে হাসি।
বইমেলা মানে সবকিছু ছেড়ে,
শুধু বইকেই ভালোবাসি।।

বইমেলা মানে স্বপ্ন বোনা,
কত মানুষের আশা।
বইমেলা মানে নীরবতা শেষে,
মিলে যায় শত ভাষা।।

বইমেলা মানে সম্প্রীতি মাঝে,
মিলনের এক খেলা।
বইমেলা মানে শহর জুড়ে,
উৎসব আর মেলা।।

বইমেলা মানে কত লেখক,
আর কত কবিদের লেখা।
বইমেলা মানে অনেক কিছু,
কত নতুন কিছু শেখা।।

বইমেলা মানে অনেক গল্প,
পড়লে হয় না শেষ।
বইমেলা মানে কত বই,
যেন বইদের - ই এক দেশ।।

বইমেলা মানে নয়কো বিভেদ,
এক হোক বা আশি।
বইমেলা মানে সবাই মিলে,
চলো একসাথে ঘুরে আসি।।

সৃজন চ্যাটার্জী
ইলেক্ট্রনিক্স এ্যান্ড কমিউনিকেশনস্ ইঞ্জিনিয়ারিং, দ্বিতীয় বর্ষ

তুমি

ব্যস্ত শিয়ালদায় দাঁড়িয়ে
আজও তোমায় মনে পড়ে
কফি হাউসের সেই আড্ডা
কলেজ স্ট্রিটের সেই কেনাকাটা
আনন্দ হট্টগোলে মেশা
সেই হৃদয়স্পর্শী মুহূর্ত।

জানি চলে গেছো বহুদূরে
আসবে না আর কোনদিন ফিরে
কেন চলে গেলে?
কোথায় চলে গেলে?
পরে নাকি একটিবার মনে?
কোন সে দেশ আমার থেকেও প্রিয়?
পাও নাকি শুনতে
আমার কথা.... অন্তরের ব্যথা...।

জানি তবু আসবে ফিরে
যাবে না চলে চিরকালের তরে
আছি আজও অপেক্ষায়,
পাবো দেখা তোমার।

আকাশ তবু সুনীল
সাগর তবু উন্মত্ত
শুধু একা আমি,
তুমি বিহীন।

সাগর তীরে বসে
শান্ত আকাশ সমুদ্র সমাবেশে
কাটানো সেই রাতের স্মৃতি
আজও বাজে হৃদয় মধ্যে।

আছি আজও বসে আমি
নেই শুধু তুমি
এই আঁধারে ফেলে
গেলে কোথায় চলে?

হৃদয়বিহারী গো
হৃদয়ে বিরাজো তুমি
প্রাণ ছাড়া কি দেহ বাঁচে?
তুমি ছাড়া আমার কি অস্তিত্ব।

স্বর্ণালী মিত্র
কম্পিউটার সায়েন্স এ্যান্ড ইঞ্জিনিয়ারিং, প্রথম বর্ষ

আমি গাছ বলছি

গাছটায় রোজ জল দিয়েছি
বোধহয়, ভালবাসতাম তাই।
সেদিন দুপুরের সূর্যের প্রবল তাপে-
ও আমাকে ছায়া দিয়েছিল।
সেদিন বিকেলে, কালবৈশাখী ঝড়ে-
আমিও ওকে জড়িয়ে থেকেছি।
আঁকড়ে রেখেছি, যতটা রাখা যায়।
ওকে যেতে দিইনি কোথাও....
বোধহয়, ভালবাসতাম তাই।
ওর খুব জ্বর, চাদর টেনে দিয়েছি, ওর গায়ে।
পাতা ঝরার মরশুম যখন এলো আমাদের-
জীবনের শুকনো পাতা গুনেছি একসাথে।
প্রজাপতিদের ধরে রেখেছি বুকের খাঁচায়।
কারণ ওদের রঙে ওকে বড্ড মানায়।
ওকে স্বপ্নে দেখেছি, তাই রঙিন রেখেছি....
বোধহয়, ভালবাসতাম তাই।
কিন্তু একদিন,
ও দখল নিল আমার ঘরের দেয়ালগুলোয়।
ফুঁড়ে ঢুকলো, আমার মাটির ভেতর।
আমি কিছু মনে করিনি
আমার শুকনো কুয়ো থেকে-জল দিয়েছি রোজ, ওর শরীরে।
ওকে সবুজ দেখেছি, তাই সতেজ রেখেছি...
বোধহয়, ভালবাসতাম তাই।
হঠাৎ একদিন, ও আমায় প্রশ্ন করল-
"ভালোবাসা কাকে বলে বোঝো"?
আমি তাকিয়ে থেকেছি, বোকার মতন।
আমি মাথা চুলকেছি। ঠিক যেমন ছেলেবেলায়-
আদর করে, ওর পিঠ চুলকে দিয়েছিলাম।
ফল ফুল চাইনি কোনদিন।
তবে ছায়া? ছায়া কি নিইনি?
নিয়েছি। কারণ না নিলে, ওর কাছে থাকা যায় না।
সে বলল-
"ভালোবাসা শুধু ভোগবাদী নয়,
দমকা হাওয়ায় সাম্যবাদী মুক্তি।
উড়তে দিলে স্বাধীনতা ভালোবাসা,
বাঁধনে শুধুই পরজীবী আসক্তি।
উড়ে যেতে দিও প্রতিদিন তাকে,
ঘর ফেরোতেই সংসারী ভালবাসা।
না ফিরলেও, ভিজে বালিশরা জানে-
মনে মনে শুধু আসল কাছে আসা।"
বোধহয়, আমি ভালোবাসা বুঝিনি...
কারণ, আমি তো নিজেকেই ভালোবাসিনি.....

দেবার্পন মুস্তাফী
কম্পিউটার সায়েন্স এ্যান্ড ইঞ্জিনিয়ারিং, দ্বিতীয় বর্ষ

সুখের অসুখ

ইচ্ছে করে, সুখ খুঁজে নিই।
ছাইরাঙা যত দুঃখগুলো,
বেচে দিই সব সুখের দামে-
কুড়িয়ে পাওয়া খুচরো মালিকানা;
স্যাঁত স্যাঁতে মনে সবুজাভ সামিয়ানা;
সব ভিজে যায়, বৃষ্টি যখন নামে।

ঠিক যেমন, সুখেই আছে কৃষ্ণচূড়া.....
মরশুমি সুখে লালচে ফাগুন মাস।
মন খারাপি স্তব্ধ বিকেল শুধু জানে
কেউ পেয়েছে সুখ, কারো সর্বনাশ।
সুখের গায়ে, মাটির সোঁদা গন্ধ...
পিঠের উপর জীবাশ্ম পায়ের ছাপ।
ভীষণ শীতে তোমার আমার ঠোঁটে-
উষ্ণ সুখে বিশ্বাসী, শুধু চায়ের কাপ।

সুখ দেখতে, মায়ের হাসির মতন...
গভীর রাতে মালকোষে টানা ছবি।
ফুলেরা বুকে আগুন নিয়ে বাঁচে-
সুখে পুড়ে যায় বারুদমাখা কবি।

তবু জানি তুমি শেষ রাতে বলবে....
সুখ অসুখে ক্লান্ত আমি।
জানতে চাইবে-
"কোথায় তোমার সুখ?"

আমি বলব যখন তুমি...
ঝড়ের মুখে, এলো চুল সরিয়ে দাও;
কাজল মাখা চোখে আমার দিকে দেখো·
আমিও দেখি।
আমার সুখ।

দেবার্পন মুস্তাফী
কম্পিউটার সায়েন্স এ্যান্ড ইঞ্জিনিয়ারিং, দ্বিতীয় বর্ষ

অব্যক্ত

লক্ষাধিক অসমাপ্ত গল্পেরা
নতুন করে শুভারম্ভের তাগিদে শীতের কোলে সই পাতায়
পাতা ঝরিয়ে নুইয়ে পড়া গাছটাও স্বপ্ন দেখে বসন্তে বিলীন হবার,
পাহাড় সমান আফসোসের সাথে ঝগড়ার পরে
শেষটায় অভিমানেরা হার মানে,
নতুন কাঁধে মাথা রাখার বাসনায়।
পড়ে থাকে হাজারো না বলা শব্দ, পরিণতির আশায়।
স্বস্তি মেলে শীতের রাতের নির্ঝুমতায়, জনমানবহীনতায়,
বহুদূর অবধি পাড়ি দেবার প্রত্যাশায়।
শব্দ দূষণের ভয় কে দূরে ঠেলে,
চাপা কান্নারা অঝোরে বৃষ্টি ঝরায়।
স্মৃতিরাও স্মৃতির অতলে মাঝে সাঝে ডুবে যায়, তোদের রুক্ষতার আঘাতের ভয়ে,
মনগড়া কল্পনারা খোলা আকাশে পাখনা মেলার স্বপ্ন দেখে,
বাস্তবতায় বাঁচার লোভে!
প্রতিশ্রুতির খামখেয়ালি কোনায় আজও মন ফুলে ফেঁপে ওঠে..!
অভিযোগে, অভিমানে!

বহুদিন যাবৎ দরজায় খিল পড়েছে,
অভিমানেরা উদবাস্তু হয়ে আশ্রয় খোঁজে,
অব্যক্ত শব্দেরা অজানা-অচেনা পথে আছড়ে পরে।
বোবা মনের কাল্পনিকতার,
ধৈর্য ফুরায়।
নিয়ন্ত্রিত অনুভুতিরা ভীতি কাটিয়ে মুক্তির আকাশে লুটোপুটি খায়।
ফুরিয়ে যাওয়া কথারা নতুন গল্পে দারিদ্র ভোলে,
মানসিক শূন্যতারা অর্ধচন্দ্রের বুকে সম্পূর্ণতা অনুভব করে।
ভেঙে চুরে যাওয়া টুকরো গুলোকে কেউ রোজ নিজের হাতে আকার দেয়।
ভালো থাকার ভালো রাখার আকার...
শেষ থেকে শুরুর গল্প লেখার মধ্য দিয়ে
হাজারো প্রতিশ্রুতির অপেক্ষাবসান ঘটে।।

সৃজনী মিত্র
ইলেক্ট্রনিক্স এ্যান্ড কমিউনিকেশনস্ ইঞ্জিনিয়ারিং, প্রথম বর্ষ

মায়ের ভালোবাসা

হয়তো জানো
তুমি কিভাবে এলে
প্রাণের চেয়েও বাসো ভালো
যার গর্ভে এতদিন ছিলে

লালন-পালন রক্ষাকবচ
তুমি আছো মাগো
আমারই কেবল ধীরে ধীরে
বেড়ে গেল তোমার প্রতি ইগো

ছোটবেলায় যতবারই আঙুল দেখিয়ে বলতাম, মা ওটা কি?
প্রতিবারই মা হেসে বলতেন,
ওটা পাখি
তবে আজ কেন মায়ের প্রশ্নে
আমার উত্তর বাকি?

সারাদিনের হেঁসেল সামলে
মায়ের কাপড় যেত ভিজে
তবুও তার ঝোঁক হতো না
একটু বেরোবে সেজেগুজে

সেই পরিশ্রমেরই দাম মিলত
টিফিনে, খাবার টেবিলে
খুঁত ধরতে
নুন কিংবা ঝালে...

সৌরভ সাহা
কম্পিউটার সায়েন্স এ্যান্ড ইঞ্জিনিয়ারিং, দ্বিতীয় বর্ষ

শিক্ষক

শিক্ষক আমি তারেই বলি,
অন্তরে যার জ্ঞানের আলো-
সত্য জ্ঞানের প্রদীপ জ্বেলে,
ছাত্রকে যে বাসে ভালো।
শিক্ষক মানে একটু ভয়;
আর অনেকখানি শ্রদ্ধা
শিক্ষক মানেই ভালোবাসার বন্ধু
আর নতুন কিছু শেখা।
শিক্ষক তুমি দেখাও আলো,
দেখাও স্বপ্ন ভবিষ্যতে;
মানুষ করার কারিগর তুমি
আগামীর ভবিষ্যতে।
শিক্ষক তুমি সত্যি মহান-
শিক্ষা করছো দান
চির উজ্জ্বল "শিক্ষক" তুমি
তোমারে করি শতকোটি প্রণাম।

অরিজিৎ ঘোষ
কম্পিউটার সায়েন্স এ্যান্ড ইঞ্জিনিয়ারিং, প্রথম বর্ষ

कथा 3 कहिनी

আস্তিক

অস্তিক ভট্টাচার্য, কম্পিউটার সায়েন্স এ্যান্ড ইঞ্জিনিয়ারিং, চতুর্থ বর্ষ

নাম আস্তিক হলেও স্বভাবে মোটেও আস্তিক নয়। প্রাচীন চিন্তাধারার ব্রাহ্মণ পরিবারের ছেলে হওয়ায় ছোট থেকেই ঠাকুর দেবতাদের গল্প শুনে বড় হয়েছে আস্তিক। পুজো পাঠ সবেতেই অংশগ্রহণ করেছে। মঙ্গলবার, বৃহস্পতিবার, শনিবার সব মেনেছে। ১৩ বছর বয়সে উপনয়ন হয়। ১ বছরের কঠিন তপস্যা। মাছ, মাংস, ডিম থেকে দূরে থাকতে হবে। এমনকি দোকান থেকে কেনা জিনিস খেতে পারতো না। তবুও কষ্ট করে একটা বছর মন থেকে সব মেনেছে। তারপর সময়ের সাথে সাথে বাকিদের মত যখন তার আশা সম্পূর্ণ হয়নি, তখন তখন তার ঈশ্বরের অস্তিত্ব নিয়ে সন্দেহ হয়েছে। বারবার বিভিন্ন ভাবে সকলের কাছেই সে নিজের সন্দেহ এবং বিশ্বাস তুলে ধরতো। বেদ পুরান উপনিষদে উল্লেখিত ইতিহাস তথ্যকে তথাকথিত গল্প আর অন্ধবিশ্বাস বলে দাবি করতো। মন্দির তো দূরের কথা, বাড়ির ঠাকুর ঘরের দিকেও ভুলবশত তাকাতো না। মা বাবার ভয়ে পৈতে খুলে ফেলতে পারেনি শুধু। অনেকটাই গভীর আঘাত পেয়েছিল হয়তো আস্তিক। তাই নিজেকে আসতে আসতে সম্পূর্ণ নাস্তিক করে তুলেছিল।

সময়ের সাথে সাথে আস্তিক বড় হয়ে উঠলো। আস্তিকের বিশ্বাস আর চিন্তাধারাও আরও প্রবল হতে থাকল। আস্তিক এর জীবন থেকে যেন 'ঈশ্বর' নামটাই হারিয়ে গেল। সে ভগবানকে একপ্রকার ঘৃণাই করে বলা যায়। গরমের ছুটিতে আস্তিক এক আত্মীয়র বাড়ি এসেছে। গ্রাম এলাকা, প্রত্যন্ত গ্রাম। এই সময় গ্রামের মন্দিরে বড় করে পূজা হত। গ্রামবাসীদের জন্য বিশাল বড় উৎসব। মন্দিরের বাইরে মেলা বসে। পূজোর দিন জোর করে সকাল সকাল ঘুম থেকে তুলে, স্নান করিয়ে, আস্তিক কে নিয়ে যাওয়া হল মন্দিরে। মন্দিরে সে কিছুতেই ঢুকবে না। সে বলে, "পাথরের সামনে আমি ঝুঁকতে পারবো না"। মন্দিরের বাইরেই বসে রইলো আস্তিক। বাড়ির সকলে ভেতরে পূজো দিচ্ছে। এদিকে বাইরে বসে বসে পাঠা বলি দেখছে আস্তিক। তার চোখ দিয়ে ফোঁটা ফোঁটা জল গড়াচ্ছে। চার পা গুলোর প্রত্যেক চিৎকারের সাথে যেন ঈশ্বরের প্রতি আস্তিকের ঘৃণা আরও প্রবল হচ্ছে। এমন সময় পেছন থেকে ডাক এল,

"কি হলো, পুজো দেখবে না?"

এক প্রাপ্তবয়স্ক, সাধুর মত কাপড় পরা লোক, বেশ ভারী গলায় আস্তিক কে জিজ্ঞাসা করল।

"না আমার ওসব ভালো লাগে না।"

"পুজো ভালো লাগেনা? কেন?"

"এমনি। আমি ঠাকুর মানি না।"

"নাম কি?"

"আস্তিক ভট্টাচার্য।"

"নাম আস্তিক, কিন্তু ঠাকুর মানো না।"

"এসব অন্ধবিশ্বাস। আমি চোখে না দেখলে বিশ্বাস করি না।"

"হাওয়া চোখে দেখা যায়?"

"হাওয়ার বৈজ্ঞানিক প্রমাণ আছে। ঠাকুরের আছে?"

"বেশ তর্ক জোগাড় করেছো দেখছি।"

"তর্ক নয়। সত্যি বলছি। আমি যেটা দেখি, পড়ি, বুঝি, সেটাই বলি।"

"বুঝলাম। তা ঈশ্বরের সাথে তোমার সংঘাতটা কোথায়?"

"যার অস্তিত্ব নেই তার সাথে সংঘাত কিসের? ঈশ্বর যদি থাকতেন তাহলে এই বেচারা প্রাণীগুলোকে এভাবে মরতে হত? এরা ঈশ্বরের সন্তান নয়?"

"তোমার কথায় বিষাদের গন্ধ আছে।"

"মানে?"

" আশা, আকাঙ্ক্ষা, আমাদের প্রবল। তা মানুষের থেকে হোক অথবা ঈশ্বরের থেকে। মন মতো ফল না হলেই বিষাদ যোগ। ঠিক বললাম তো?"

" বিশ্বাস থাকলে আশা থাকবে না? আর আশার জন্যই তো মানুষ বেঁচে থাকার প্রেরণা পায়।"

"পরীক্ষায় ভালো ফল পাওয়ার আশা করো না?'

" নিশ্চয়ই করি।'

"ফল ভালো না হলে কী নিজেকে বিশ্বাস করা ছেড়ে দাও? পড়াশোনা ছেড়ে দাও? পরীক্ষা দেওয়া ছেড়ে দাও? নাকি পরের বারের জন্য আরো ভালো করে পড়াশুনো করো?"

"আরো বেশি পড়াশোনা করি।"

"তুমি নিজেই যখন নিজের আশা পূর্ণ করতে পারছ না, কি করে ভাবলে ঈশ্বর তোমার সব আশা পূর্ণ করবেন? তোমার ওপর কেবল নিজের আশা পূর্ণ করার দায়িত্ব আছে আর তুমি সেটাই করতে অক্ষম। ঈশ্বরের ওপর তো গোটা জগতের আশা। সকলের আশা পূরণ করা কী সম্ভব?"

"তাহলে কী মানুষ আশা করবে না? আর আশা ভাঙলে কষ্ট পাওয়া তো স্বাভাবিক।"

"এই যে এত বড় বড় ব্যবসা এত উপযুক্ত পরিকল্পনার পরেও ডুবে যায়। সঠিক ফল করতে পারি না।কেন বলতে পারো?"

"না জানি না।"

"যেকোনো কর্মের চারটি পর্যায় থাকে। কর্তা, অর্থাৎ যে করছে। করণ অর্থাৎ যার মাধ্যমে বা সহযোগে করছে। অধিষ্ঠান অর্থাৎ যেই ভিত্তিতে

করছে এবং শেষটা হলো নিয়তি। তুমি যদি প্রথম তিন পর্যায় নিষ্ঠার সাথে সম্পন্ন করো, তবে তোমার নিয়তি তোমার পক্ষে থাকতে পারে। কিন্তু যদি এই তিন পর্যায় সম্পূর্ণ না করেই তুমি নিয়তির কথা ভাবতে থাকো তাহলে নিয়তি কোন মতেই তোমার পক্ষে থাকবে না।"
"কিন্তু পর্যায়গুলো শেষ করলেও যদি ফল না পায়, তাহলে কষ্ট হবে না? এতটা খাটার পর তো ফলের আশা করবেই।"
"খেলাধুলো করো?"
"হ্যাঁ করি।"
"ভালো খেলার পরেও কখনো হেরেছো?"
"বহুবার।"
"কেন বলোতো ?"
"কারণ সামনের জন হয়তো আমার থেকে বেশি ভালো খেলেছিল।"
"আশা তো সেখানেও ভাঙ্গে। তাই বলে খেলা ছেড়ে দাও ?"
"না।"
"খেলার সময় যেমন জেতা হারার কথা ভুলে, ভালো খেলার কথা ভাবো। সেইরকমই জীবনের সব কর্মক্ষেত্রেই ফলের কথা ভুলে নিষ্ঠার সাথে কর্ম সম্পন্ন করতে হয়। জেতা হারা লাভ ক্ষতি সুখ-দুঃখ এসবের থেকে মুক্ত হলেই তো আসল প্রাপ্তির খোঁজ পাবে, সাংখ্য যোগের খোঁজ পাবে।'
"কিন্তু ফলের আশা না থাকলে কাজ করার ইচ্ছা জাগবে কিভাবে?"
"দায়িত্বজ্ঞানবোধ থেকে। আমাদের সকলেরই কিছু দায়িত্ব রয়েছে। নিজের প্রতি, মা বাবার প্রতি, পরিবারের প্রতি, সমাজের প্রতি, জগতের প্রতি। এইসব দায়িত্ব গুলো নির্লোভের সাথে পালন করাই তো আমাদের ধর্ম।"
"তাহলে হিন্দু, ইসলাম এগুলো কি ধর্ম নয়?"
"এগুলো তো সম্প্রদায়। ধর্ম অর্থাৎ যা আমাদের ধারণ করে। যেমন ছেলের পুত্রধর্ম, শিষ্যের শিষ্যধর্ম, রাজার রাজধর্ম। নিজের নিজের দায়িত্ব পালন করাই আমাদের ধর্ম।"
"তাহলে কর্ম কী?"
"ধর্ম পালনের পন্থাই হল কর্ম।"
"কর্ম করলে, কর্মফলের আশা করা যাবে না?"
"পুত্রধর্ম পালনের জন্য মা বাবার সেবা করার সময় কোন ফলের আশা তুমি করো?"
"না সেরকম কোন আশা করি না।"
"ঠিক। তোমার কর্ম তোমার অধীনে, ফল তোমার অধীনে নয়। নিষ্ঠার সাথে কর্ম করে যাও, সময় মতো ফল ঠিক পাবে। এটাই তো কর্ম যোগ।'
"কিন্তু ফলের চিন্তা না করে কাজ করা কী সম্ভব?"
"সূর্য আলো দেওয়ার ফল চায়?"
"সূর্য কী মানুষ?"
"যে মানুষ সব কাজ মানবকল্যাণের জন্য করে, তথাকথিত বাস্তববাদী স্বার্থপর ও লোভীরা সেই সব মানুষদের কাজকে অকাজ বা অকর্ম বলে দাবি করে। কিন্তু বাস্তবে স্বার্থলোভের জন্য করা সকল কাজই হল আসলে অকর্ম। কারণ এই কর্ম অহেতুকে করা হয়। এর কোন বাস্তব মূল্য বা সামাজিক প্রয়োজন নেই।একেই জ্ঞান কর্ম যোগ বলে।"
"কিছু কাজ করতে গেলে ইচ্ছা তো জাগবেই। সেটা বন্ধ করা কী সম্ভব?"
"ইচ্ছের সৃষ্টির ভিত শরীর। যা সম্পূর্ণ নশ্বর। তাই যদি শরীরের মোহ না ছাড়ো তাহলে ইচ্ছা কে দমন করতে পারবে না। নিজের আত্মাকে চেনো। আত্মা অমর। সন্ন্যাস যোগ এটাই বলে।"
"আত্মাকে চেনার উপায় কী ?"
"ধ্যান যোগ।"
"ধ্যান করা?"
"একদম ঠিক। ধ্যান যোগ তোমাকে তোমার ধর্ম খুঁজে পেতে ও কর্ম করতে সাহায্য করবে। ধ্যান যোগ তোমাকে ইচ্ছা আকাঙ্ক্ষা থেকে মুক্তি পেতে সাহায্য করবে। সঠিক রাস্তা বেছে নিতে সাহায্য করবে।"
"আমি সঠিক রাস্তায় নেই?"
"সেটা নির্ভর করে জ্ঞানের উপর। জ্ঞানী সঠিক সিদ্ধান্ত নিতে সক্ষম। জ্ঞানের অভাব মানুষ কে ভুল পথে চালনা করে। যদিও অজ্ঞানী তা মানতে চায় না।"
"এই জ্ঞান কোথায় পাওয়া যায়? "
"জ্ঞান তো সর্বত্রই বর্তমান। তাও মানুষের সুবিধের জন্য বেদ, পুরান, উপনিষদ এবং অন্যান্য ধর্মগ্রন্থে এই জ্ঞান সঞ্চয় করা আছে।"
"কিন্তু এত কিছু পড়ে শেষ করতে করতে তো মানুষের একটা পুরো জীবন লেগে যাবে।"
"শুধুমাত্র মহাভারত পড়েই জীবনের মূলজ্ঞান অর্জন করা সম্ভব। মহাভারতে জ্ঞান বিজ্ঞান যোগের খোঁজ পাবে।"
"আচ্ছা মহাভারত কী তাহলে সত্যি ঘটনা নয়?"
"নিশ্চয়ই সত্যি।"
"তাহলে এতটা পরিকল্পিত কীভাবে ? সব প্রশ্নের উত্তর, সব সমস্যার সমাধান, ঠিক যেন কারো নির্দেশিত নাটক।"

"এই নাটকের নির্দেশকই তো পরমব্রহ্ম।"
"যখন তিনি নিজের ইচ্ছে অনুযায়ী চালনা করতে পারবেন তাহলে আমাদের সবাইকে সেই জ্ঞান সেই চেতনা কেন দেন না? কেন সমাজে অজ্ঞানীদের এত অন্যায় করতে দেন?"
"সুযোগ তো সকলকেই দিয়েছেন। শুধু সিদ্ধান্ত নেওয়াটা আমাদের ওপর ছেড়ে দিয়েছেন।"
"কেন?"
"তোমার বাগানের গাছের গোড়া বেশি শক্তিশালী নাকি বনের গাছের?"
"বনের গাছের টা বেশি শক্তিশালী।"
"কেন বলতো ?"
"কেন?"
"বাগানের গাছের গোড়ায় তুমি জল দাও। তাই তাকে কষ্ট করে মাটির গভীরে যেতে হয় না। সে ছড়াতে পারে না। বনের গাছের গোড়া মাটির অনেক গভীর থেকে জল নেয়, তাই সে অনেকটা শাখাবৃদ্ধি করতে পারে। তাই বেশি শক্তিশালী হয়। তাই পরমব্রহ্ম তোমার সিদ্ধান্ত নেওয়ার দায় তোমাকেই দিয়েছেন। এটাই অক্ষর পরমব্রহ্ম যোগ।"
"তাহলে এই পরমব্রহ্মই কী ঈশ্বর?"
"হ্যাঁ।"
"তাহলে এত ভিন্ন রূপের পূজো কেন হয়?"
"রাজবিদ্যা যোগের অভাবে।"
"এটা কেমন বিদ্যা?"
"এটা সেই বিদ্যা যা মানুষকে জীবন চক্র হতে মুক্তি দেয়। পরমব্রহ্মে বিলীন করে দেয়।"
"এই বিদ্যার প্রয়োজনীয়তা কী? কারো যদি এই জীবন বেশি প্রিয় হয়?"
"সেই জন্যই তো জ্ঞান যোগ প্রয়োজন। জ্ঞানী কখনো জীবন চক্রে আবদ্ধ থাকার কথা ভাবে না।"
"এই বিদ্যা তাহলে কোথা পাবো?"
"ঈশ্বরের আরাধনায়। মন থেকে ঈশ্বরের আরাধনা কর। ঠিক পাবে।"
"এই ঈশ্বর কে কেমন দেখতে? কীসের আরাধনা করবো? কোন নির্দিষ্ট রূপ আছে?"
"ঈশ্বর নিরাকার। তবে হ্যাঁ, সবেতেই ঈশ্বর আছেন এবং ঈশ্বরই সবকিছু। নিষ্ঠাই ঈশ্বর কে সন্তুষ্ট করবে। তুমি শুধু তার নাম করে যাও। বিভূতি যোগ করে যাও।"
"ঈশ্বরের দর্শন সম্ভব?"
"নিজের আত্মা কে চিনতে পারলে, নিজের সত্যি টা জানতে পারলে, পরম জ্ঞান লাভ করলে ঈশ্বরের বিশ্বরূপ দর্শন যোগও সম্ভব।"
"কী করতে হবে এসবের জন্য?"
"ভক্তি।"
"ভক্তির প্রক্রিয়া কী?"
"ভক্তি যোগের চার প্রক্রিয়া। ঋক অর্থাৎ উপাসনা, সাম অর্থাৎ জ্ঞান ভক্তি, যজু অর্থাৎ অর্চনা এবং অথর্ব অর্থাৎ আত্মসমর্পণ।"
"যদি পরম জ্ঞান জীবন থেকে মুক্তি পাওয়া হয়, তাহলে জীবন দেওয়ার কারণ কী?"
"কর্মফল। আত্মা নিজের সাথে পূর্ব জীবন বা জীবনসমূহের কর্মফল নিয়ে বিচরণ করে। প্রত্যেক জীবনে সেই ফল ভোগ করতে ক্ষেত্র অর্থাৎ দেহ ধারণ করে ক্ষেত্রজ্ঞ অর্থাৎ আত্মা। এই ক্ষেত্র অথবা দেহ পঞ্চভূতের মিলনে, মানে জল, আগুন, বাতাস, পৃথিবী ও আকাশের মিলনে সৃষ্টি হয় এবং মৃত্যুর পর সেই দেহ পঞ্চভূতে মিলিয়ে যায়। একে ক্ষেত্র ক্ষেত্রজ্ঞ যোগ বলে।"
"সবার মুক্তির পথ কী এক?"
"নিশ্চয়ই।"
"তাহলে মানুষে মানুষে এত বিভেদ কেন? কেউ উঁচু কেউ নীচু কেন? সকলের পথ তো এক।"
"ঈশ্বর কাউকে উচু নীচু বানান নি। ঈশ্বর সকলকে তিনটি গুনে ভাগ করেছেন। তমঃ, রজঃ, সতঃ। স্বভাবত অলস প্রবৃত্তির মানুষ, যাদের সমাজে অবদান খুবই সামান্য অথবা নেই বললেই চলে, তারা তমঃ বা তামসিক গুণী। যারা সক্রিয় এবং কর্মঠ প্রবৃত্তির মানুষ তারা রজঃ বা রাজসিক গুণী। যারা স্বাভাবত জ্ঞানী এবং বিচার বিবেচনার মাধ্যমে সঠিক সিদ্ধান্ত নিতে সক্ষম তারা সতঃ বা সাত্ত্বিক গুণী। এই তিন গুণের ভিত্তিতে ঈশ্বর চার বর্ণের সৃষ্টি করেছেন যথা ব্রাহ্মণ, ক্ষত্রিয়, বৈশ্য এবং শূদ্র। এদের সমাজে নিজের নিজের দায়িত্ব রয়েছে। এরা কেউ উঁচু-নিচু, ছোট-বড় নয়। এদের গুণত্রয় বিভাগ যোগ বলে।"
"তাহলে জন্মসূত্রে কেউ ব্রাহ্মণ হয় না?"
"ব্রাহ্মণত্ব অর্জন করতে হয়।"
"আর যদি না করতে পারি?"
"মানুষ নিজের তামসিক গুণের সাথে জন্ম নেয়। তারপর আস্তে আস্তে কর্মের দ্বারা বাকি গুণ গুলো অর্জন করে। সাত্ত্বিক গুণ অর্জন করতে পারাটাই হলো পুরুষোত্তম যোগ।"
"সাধারণ মানুষের জন্য এই গুণ অর্জন বেশি কঠিন না?"

“কঠিন তো হবেই। মনের আসুরী সম্পত্তি, দৈব সম্পত্তি কে হার মানালে ঈশ্বরের পথে আশা কঠিন তো হবেই।”
“সেগুলি কী?”
“অজ্ঞান, ক্রোধ, দম্ভ, নিন্দা, প্রতিশ্রুতি ভঙ্গ, ক্রূরতা, অদ্বেষ্টা, পরাধীনতা, দুষ্ট লাভ, দুষ্ট শঙ্কা, দুষ্ট মিত্রতা, বিনয়হীনতা ইত্যাদি প্রবৃত্তি হল আসুরী সম্পত্তি। অপরদিকে শান্তি, ক্ষমা, তৃপ্তি,সত্যবাদ, শৌচ, অহিংসা, তৃষ্ণারাহিত্য, দান, তপস্যা, শ্রদ্ধা, তত্ত্বজ্ঞান, সন্তোষ ইত্যাদি প্রবৃত্তি হল দৈবিক সম্পত্তি। যখন মানুষের মধ্যে আসুরী সম্পত্তি বৃদ্ধি পায় তখন তার মধ্যে অসুর প্রবৃত্তি দেখা যায়। একই ভাবে দৈব সম্পত্তি বৃদ্ধি পেলে দৈবিক প্রবৃত্তি দেখা যায়। এই দৈব আসুরী সম্পত্তির বিশেষণ হল দেবাসুর বিভাগ যোগ।”
“আসুরি সম্পত্তি কে হারানোর উপায় কী?”
“ঈশ্বরের প্রতি শ্রদ্ধা, ভক্তি ও যজ্ঞ। তিন গুণের মতো শ্রদ্ধা, ভক্তি ও যজ্ঞেরও সাত্ত্বিক রাজসিক ও তামসিক বিভাগ রয়েছে। এগুলিকে শ্রদ্ধাত্রয় যোগ বলে।”
“আর কী কী যোগ আছে যার মাধ্যমে ঈশ্বরকে পাওয়া যাবে?”
“এখনো অবধি যেগুলো বললাম, সেগুলো অবলম্বন করো। মূল তিনটি কখনো ভুলবে না। কর্মযোগ, জ্ঞানযোগ, আর ভক্তি যোগ। এই তিনটি যোগ তোমায় মোক্ষসন্ন্যাস যোগ অথবা বলতে পারো ঈশ্বরের কাছে নিয়ে যাবে।”
“মনে রাখবো। সবগুলোই অবলম্বন করবো। জ্ঞান অর্জন করবো, ভক্তি করবো আর কর্মও করবো। ঈশ্বরের কাছে যেতেই হবে। ঈশ্বর কে পেতে হবে।”
“ঈশ্বর কে কাছে পেলে কী করবে?”
“কিছু প্রশ্ন বাকি আছে। যার উত্তর ঈশ্বরই দিতে পারেন।”
“তথাস্তু!”
পিছন থেকে মায়ের ডাক এলো। আস্তিক যেন ঘুমের ঘোর কাটিয়ে উঠলো। আসে পাশে ফিরে দেখে সন্তটি কোথাও নেই। যেন অদৃশ্য হয়ে গেছেন। তবে তার কথাগুলো কে স্বপ্ন নয়, ঈশ্বরের দেখানো পথ ভেবে এগোতে থাকে আস্তিক। তার ঈশ্বরের প্রতি বিশ্বাস আবার ফিরে আসে। সে যেন এক আলাদাই ব্যক্তিত্ব হয়ে ওঠে।

বকুলপুরের শ্মশানে

দীপ্তি বাগ , ইলেক্ট্রনিক্স এ্যান্ড কমিউনিকেশনস্ ইঞ্জিনিয়ারিং, তৃতীয় বর্ষ

বিকেল পেরিয়ে গেছে অথচ সন্ধ্যে হয়নি। আমি সবে চার নম্বর রোগী দেখা শেষ করেছি, ঠিক তখনই মোবাইল বেজে উঠল। ছোট কাকা- "হ্যাঁ ছোটকাকা বলো।"

"শোন, রমার অবস্থা ভালো নয়। বোধ হয় আজ রাত কাটবে না। তুই যত তাড়াতাড়ি পারিস চলে আয় রে।"

বক্তব্য শেষ হল। হয়তো আর কিছু বলারও নেই। রমা হল ছোট কাকার একমাত্র মেয়ে। আমার চেয়ে ঢের ছোট, সবে কলেজে উঠেছে।

মাস তিনেক আগে ঘটনার সূত্রপাত হয়েছিলো। সকালবেলা ছোটকাকার ফোন এসেছিল। প্রায় কাঁদতে কাঁদতে ধরেছিল, ভাল করে কথা বলতে পারছিল না। অনেক কষ্টে বুঝতে পারলাম, হঠাৎ রমার শরীরের ডান দিকের কিছুটা প্যারালাইজড হয়ে গেছে এছাড়া কথাও বলতে পারছে না।

তখনই রওনা দিয়েছিলাম ছোটকাকার বাড়িতে। ছোটকাকা থাকে বর্ধমানের পাল্লা রোড স্টেশন থেকে চার - পাঁচ কিলোমিটার দূরে একটা গ্রামে। ওটাই হল আমাদের আদি বাড়ি। চাষবাস ছিল আমাদের পরিবারের জীবিকা। বাবা ছিলেন খুব মেধাবী। ম্যাট্রিকে খুব ভালো রেজাল্ট করে শহরে পড়তে চলে এসেছিলেন। স্কলারশিপের টাকায় এবং টিউশন করে জীবনে প্রতিষ্ঠিত হন। গ্রামের জমিজমা, বাড়ি -কোনও কিছুরই বিভাগ নেননি। আমার বড়কাকা খুব কম বয়সে মারা যান তাই গ্রামের সব কিছু ছোটকাকার দায়িত্বেই আছে।

আমাদের গ্রামের নাম বকুলপুর। কলকাতা থেকে প্রায় পঁচানব্বই কিলোমিটার ভেতরের দিকে। ঘন্টা দুই আড়াইয়ের দূরত্ব প্রায়। রমা কে আমার গাড়িতে তুলে সোজা পৌঁছেছিলাম বাঙ্গুর ইনস্টিটিউট অফ নিউরোলজিতে ডাক্তার সুবোধ সামন্তর কাছে। উনি আমাদের পড়িয়েছেন। ব্রেন সার্জেন হিসেবে বিশ্ববিখ্যাত।

স্যার আমাকে দেখে দিব্যি চিনতে পারলেন। ধৈর্য ধরে সব শুনলেন। তারপর রমাকে পরীক্ষা করলেন। তারপর আমাকে আড়ালে ডেকে বললেন, 'শোন, কেসটা ব্রেন টিউমার এবং ম্যালিগন্যান্ট। বাঁচবে না বেশিদিন। কেন বেকার কাটাছেঁড়া করাবি! বাড়ি নিয়ে যা। আর মাস তিনেক বাঁচবে। সার্জারি করলেই বা কী, না করলেই বা কী!'

আমার শরীরের মধ্য দিয়ে একটা ঠান্ডা স্রোত বয়ে গেল। স্যার কে অবিশ্বাস করার উপায়ও নেই। তবু মরিয়া হয়ে বললাম, 'স্যার, সিটি স্ক্যান বা এমআরআই করলেন না, এখনই এত শিয়োর হচ্ছেন কি করে?' স্যার হাসলেন, বললেন, তোকে কী করে বোঝাব বল দেখি! ওরে, আমি যত দিন ধরে ডাক্তারি করছি, তোর বয়স তত বছর নয়! একটা বাচ্চা মেয়ে, তার সম্পর্কে এমন করে বলতে আমারই কি ভালো লাগছে রে?'

আমি স্যারের হাত চেপে ধরলাম। বললাম,' স্যার আপনার পায়ে পড়ি, একটা চেষ্টা অন্তত করুন। 'স্যার দীর্ঘশ্বাস ফেলে বললেন, তুই বলছিস যখন, ঠিক আছে। কিন্তু, আশা খুবই কম।'

এরপর রমা ভর্তি হয়ে গেল। আমি রোজ যেতাম। একদিন চুপি চুপি জিজ্ঞেস করলাম,'বিরিয়ানি খাবি?'

অসুস্থ মেয়েটার চোখে মুখে অদ্ভুত এক ঝিলিক আনিয়ে দিলাম। নিজে খেতে পারে না। আমি খাইয়ে দিলাম। খুব তৃপ্তি করে খেলো মেয়েটা।

দিন পাঁচেক পর হবে অপারেশন। স্যার জিজ্ঞেস করেছিলেন আমি ও টি তে থাকবো কি না। আমি না বলে দিলাম। ব্রেন সার্জারির আমি কি -ই বা বুঝব? আমি তো বছর পাঁচেক আগে এমবিবিএস পাশ করা একজন জিপি। মানে জেনারেল প্র্যাকটিশনার। সকাল বিকেল মিলিয়ে ষাট-সত্তরটা রোগী দেখি। সিজন চেঞ্জের সময় সংখ্যাটা একশো ছাড়িয়ে যায়। রোগী বলতে সেই জ্বর, পেটখারাপ, নয় তো দাদ অথবা চুলকুনি, বড়জোর প্রেশার অথবা সুগার। যদিও রোজগার অবশ্য ভালোই হয়। গাড়ি কিনে ফেলেছি।আরো কিছু টাকা জমিয়ে এমডি করার ইচ্ছে আছে।

স্যার বললেন, 'তবে জিজ্ঞেস করিস না যে কেমন সার্জারি হল। যদি ঘন্টা আটেক সার্জারি করতে পারি, তাহলে বুঝবি কিছু করতে পারলাম।' ঘন্টা চারেক পরই স্যার ও টি থেকে বেরিয়ে নিজেই আমাকে ডেকে পাঠালেন। দু'দিকে মাথা নেড়ে বলেছিলেন,' কিছুই করতে পারলাম না রে! গোটা ব্রেনটাকে তো আর উপড়ে ফেলতে পারি না! ক্যান্সার ছড়িয়ে গেছে। যা বলেছিলাম, বড়জোর মাস তিনেক।'

স্যারের কথা ষোলো আনা ফলে গেল। তিন মাস পুরো হতে আর দিন চারেক বাকি। তার মধ্যেই ছোট কাকার এই ফোন। আমি আমার কম্পাউন্ডার রুপেনকে ডেকে বললাম, 'খুব জরুরী কেস ছাড়া বাকিদের ফিরে যেতে বলো। আমাকে এক্ষুনি বেরিয়ে বর্ধমান যেতে হবে।' তাহলেও নয়- নয় করে আরও দশ-পনেরো জন রোগীকে দেখতে হল। চেম্বার শেষ করে এক বার বাড়ি ঘুরে যখন বর্ধমানের উদ্দেশ্যে রওনা দিলাম, তখন সাতটা বেজে গেছে।

পৌঁছে দেখলাম রমার অ্যাকিউট গ্যাসপিং হচ্ছে। বাংলায় যার মানে নাভিশ্বাস উঠেছে। রাত সাড়ে এগারোটা নাগাদ রমার সব জ্বালা জুড়িয়ে গেল। নিকটাত্মীয় বলে আমি আর ডেথ সার্টিফিকেট লিখলাম না, স্থানীয় এক ডাক্তার বাবু এসে লিখে দিলেন। সব কিছু গুছিয়ে যখন শ্মশানের উদ্দেশ্যে বেরোনো হলো, তখন রাত প্রায় দুটো। শ্মশানটা অবশ্য কাছেই। ছোটকাকার বাড়ি থেকে মিনিট দশেকের হাঁটা পথ।

গ্রামের শ্মশান। চার-পাশ ঘন অন্ধকারে ডুবে আছে। গোটা দুইয়েক মশাল আনা হয়েছে। তবে তাতে ওই মিশকালো অন্ধকার দূর হয়নি। পৌঁছানোর একটু পরেই সামনে এলেন রক্তাম্বর এবং জটাজূটধারী এক সন্ন্যাসী, নাম হল-কালিবাবা। ইনি নাকি এক বিরাট সাধু। লোকে নাকি বলে সিদ্ধ পুরুষ। এই শ্মশানে বহু বছর ধরে আছেন। শ্মশানবন্ধুদের একজন তাড়াতাড়ি দুটো দেশী মদের বোতল আর কিছু চাল, ডাল, আলু এনে তাঁর হাতে তুলে দিল, শ্মশান-ভৈরবের প্রণামী হিসেবে।

কাঠ সাজিয়ে, সবকিছু ঠিকঠাক করে যখন পিন্ডদান আর মুখাগ্নির সময় এল, তখন ছোট কাকা আমাকে বলল, 'আমাকে এই যন্ত্রণা থেকে রেহাই দে। যা কিছু করার তুই-ই কর।' যদিও এই সব ধর্মীয় আচরণে আমার বিশ্বাস নেই, তবুও যারা বিশ্বাস করে তাদের বিশ্বাসে আঘাত করা আমার নীতিবিরুদ্ধ । তাই নিঃশব্দে সবকিছু করলাম। কালি বাবা মন্ত্র পাঠ করলেন। তারপর চিতা জ্বলে উঠল।

চিতা থেকে কিছুটা দূরে এসে বসেছিলাম। মনের ভিতরটা যেন হু-হু করছে। কাছেই বিধ্বস্ত ছোট কাকা বসে আছে। যারা চিতার তদারকি করছিল

তাদের মধ্যে কেমন যেন একটা গুঞ্জন। ওরা অন্য দু-এক জনকে ডাকল; তারা গিয়ে বাঁশ দিয়ে খোঁচাখুঁচি করল। চিতা ঘিরে জটলা শুরু হল। আমিও এগিয়ে গেলাম।

ভারী অবাক হলাম। মিনিট পনেরো ধরে চিতা জ্বলছে। কিন্তু দেহ এখনো একেবারে অবিকৃত। অবাক হয়ে ভাবছি কি করনীয়! শ্মশানযাত্রীদের দু-এক জন বলল, পুরানো টায়ার জোগাড় করে আনার কথা। তাতে নাকি দেহ পোড়াতে সুবিধে হয়। এমন সময় একজন শ্মশান যাত্রী আমাকে বলল, 'কালিবাবা আপনাকে ডাকছেন।' এই ঝামেলার মাঝে অকারণ ডাক, বিরক্তিতে মন ভরে গেল। ধারণা করলাম, নির্ঘাত লোকটা কিছু টাকা-পয়সা চাইবে। তবুও এগিয়ে গেলাম।

একটা ছোট্ট বাঁধানো জায়গা সেখানে ছিল তারা মায়ের মূর্তি। মাথার উপর ছাদ। তার কাছেই কালি বাবার ঝুপড়ি। তিন দিক ঘেরা। মাথায় ছাউনি। কিন্তু কোনও দরজা নেই। ঘরে একটা লণ্ঠন জ্বলছে। ঘরের কোণে একটা আসন। তার সামনে একটা কঙ্কালের মাথা। একটা ত্রিশূল মাটিতে গাঁথা। হাসি পেল। ডাক্তারি পড়তে গিয়ে বহু মৃতদেহ আর কঙ্কাল নিয়ে ঘাটাঘাঁটি করতে হয়েছে। সুতরাং ওই একটা মাথা আমার মধ্যে কোনও ভাবান্তর তৈরি করল না।

কালি বাবা আসনে বসেছিলেন। সামনে বোতল আর গ্লাস রাখা। দিব্যি সেবা চলছে। আমার মনের মধ্যে নীরব অশ্রদ্ধা ফুটে উঠল। এরা সমাজের পরজীবী। মানুষের অন্ধবিশ্বাসকে হাতিয়ার করে এরা জীবনধারণ করে। বিরক্ত লাগছিল। বললাম, "আমাকে ডাকছিলেন?" কালিবাবা একটা কাঠের টুল দেখিয়ে বললেন, "বস। ডাক্তার মানুষ-মাটিতে বসলে জাত যাবে তোর!"

কথা না বাড়িয়ে, বক্রোক্তি হজম করে, বসে পড়লাম। আমি যে ডাক্তার সে খবরটা নিশ্চয়ই কোন শ্মশান যাত্রী সরবরাহ করেছে। কিন্তু এদের এই তুই তোকারি করে কথা বলা আমার ভীষণ বিরক্ত লাগে। ইচ্ছে করছিল আমিও একে তুই করে বলি। মনে মনে এও ভাবলাম, "ক" টাকা চাই বলো না বাপু, সম্ভবের মধ্যে হলে নির্বিবাদে দিয়ে দেবো।"

কালি বাবা সশব্দে হেসে বললেন, "চিন্তা নেই রে, টাকাপয়সা চাইতে তোকে ডাকিনি।" 'অবাকই হলাম। লোকটা বোধহয় থট রিডিং জানে। কালিবাবা গ্লাসে চুমুক দিয়ে বললেন, "দেহটা পুড়ছে না। কিন্তু কেন পুড়ছে না -জানিস?"

আমি জিজ্ঞাসু দৃষ্টিতে তাকালাম। কালি বাবা বললে, 'নাঃ, এমনি বললে তোর যুক্তিবাদী মন কিছুতেই মানবে না। তোকে এমন কয়েকটা কথা বলি যেটা বললে তোর বিশ্বাস হবে। যেমন ধর, আজ শেষ যে রোগীটা দেখেছিস, তিনি তারিনী বাবু। মস্ত প্রোমোটার। কিন্তু মাস ছয়েক আগে হার্টে বাইপাস অপারেশন হয়ে গেছে। এখনো বুকে মাঝে মাঝেই খুব ব্যথা করে। তুই বলেছিস, এরকম ব্যথা একটু থাকবেই। ওটা সহ্য করতে হবে। তারপর ধর, ধূলাগড় পেরিয়ে একটা ধাবায় বসে তুই রুটি আর চিকেন কষা খেয়েছিস। মনে মনে ভাবছিলি, কে জানে কখন কি জুটবে, তার চেয়ে পেটটা ভর্তি করে নেওয়াই ভালো। কাঁচা পেঁয়াজ আর লঙ্কা দিতে দেরি করছিল বলে একটু রাগও দেখিয়েছিস। কী, বিশ্বাস হল-কালি বাবা ফালতু বুজরুক নাকি?'

বেশ অবাক হলাম। এসব এর পক্ষে কি করে জানা সম্ভব? আমার পেছনে গোয়েন্দা লাগিয়েছে নাকি?

কালিবাবা বলে চলেন, 'নাঃ, এগুলো কেউ তোকে ফলো করে জানতে পারবে, অথবা তোর শাগরেদ রুপেনের সঙ্গে আমার গোপন আঁতাত থাকতে পারে। বরং এটা বলি, আসার সময় তুই একটা নীল রঙের ব্যাগে দু'-চারটে জামাকাপড় নিয়ে এসেছিস। স্নান করে পরতে হবে- এই ভেবে। ব্যাগটা তোর গাড়ির ডিকিতে রাখা আছে। তার পর, গতকাল রাতে তুই হ্যারিসনের বই থেকে মন দিয়ে ডাইবেটিসের চিকিৎসা সম্পর্কে পড়ছিলি। বইটা অবশ্য তোর কেনা নয়, একজন মেডিকেল রিপ্রেজেন্টেটিভের কাছে আদায় করেছিস। ওদের অ্যান্টিবায়োটিক নিয়মিত প্রেসক্রিপশন করিস। কি, এবার একটু একটু বিশ্বাস হয়েছে?'

আমার কেমন যেন ভয় ভয় করে। আমার বিজ্ঞানের পড়াশোনা, ডাক্তারি বিদ্যে, যুক্তিবাদী মন, সব যেন তালগোল পাকিয়ে যাচ্ছে। একটু বিস্ময় নিয়েই কালিবাবার দিকে তাকাই। কালিবাবা আবার বলেন, 'শোন, দু'একজনকে সঙ্গে করে এক বার তোর কাকার বাড়িতে যা। স্নান না করে তো বাড়ি ঢুকতে পারবি না। ওদেরই বলবি -রমার ঘরে আলমারির একদম উপরের তাকে জামাকাপড়ের পেছনে একটা অ্যালুমিনিয়ামের বাক্স লুকানো আছে,সেটা এনে দিতে। ওটা আমার কাছে নিয়ে আয়। ওর ভেতর রমাকে লেখা একটা ছেলের অনেকগুলো চিঠি আছে। রমা চায় না ওগুলো কারও হাতে পড়ুক। কেউ যেন ওই বাক্স না খোলে। তুইও খুলবি না। যা।'

এই বলে কালিবাবা দু-এক জন শ্মশানযাত্রীকে ডাকেন। তাদের বলেন, 'একে একবার ওর কাকার বাড়ি নিয়ে যা। ও একটা জিনিস আনতে যাবে। সেটা আনলে তবেই দেহ পুড়বে। টায়ার জোগাড় করে কোন লাভ হবে না।'

ফস করে মুখ দিয়ে বেরিয়ে গেল, 'এরকম আবার হয় নাকি!'

'নিজের চোখেই তো দেখছিস, হচ্ছে...' বললেন কালিবাবা, 'একটা বাচ্চা মেয়েকে অকালে এই সুন্দর পৃথিবী ছেড়ে বিদায় নিতে হচ্ছে, তার কষ্ট হবে না ? তার তো আর কোনও চাহিদা নেই, শুধু তার একান্ত গোপন কয়েকটা চিঠি ফেলে রেখে যেতে চাইছে না। সে চাইছে না ছেলেটার নাম কোনও দিন কারও সামনে আসুক। যে মেয়েটা কিছুই পেল না কয়েকটা ভালোবাসার চিঠি ছাড়া, সে এত সহজে শেষ হয়ে যাবে কী করে? আর দেরি করিসনি, যা বলছি শোন.....'।

আমি নিঃশব্দে কালি বাবার সব আদেশ পালন করি। সব কিছু সেরে ফিরে আসতে প্রায় আধ ঘন্টা লাগে। এক বার চিতার কাছে যাই। দেহ তখনও অবিকৃত। বাক্সটা নিয়ে কালিবাবার কাছে যাই। কালি বাবা বাক্স টা খুলে চিঠি বার করেন। নিজের হাতে সেগুলো নিয়ে চিতার কাছে যান। গোছাভর্তি চিঠিগুলো চিতার আগুনে ফেলে দেন। নিমেষে কাগজের তাড়া জ্বলে ওঠে। তারপর কালি বাবা মাথা তুলে অদৃশ্য কার দিকে যেন চেয়ে বলেন, 'কী, এবার শান্তি তো?'

ওঁর মুখে এক অদ্ভুত হাসি ফুটে ওঠে। বেশ কয়েক মিনিট ওখানে দাঁড়িয়েই থাকি। অবাক হয়ে দেখি, দেহ পুড়তে শুরু করেছে। কিছুটা দূরে সরে যাই। কালিবাবা তাঁর ঝুপড়ির দিকে হাঁটতে থাকেন। ওদিকে তখন পুব আকাশ লাল হয়ে উঠেছে।

এক দিকে শ্মশান, অন্য দিকে জীবন। একদিকে যুক্তি বাস্তব বিশ্বাস, অন্যদিকে প্রত্যক্ষ দৃষ্ট, এই আশ্চর্য ব্যাখ্যাহীন ঘটনা আমাকে অদ্ভুত এক সন্ধিমুহূর্তে দাঁড় করিয়ে দেয়।

গুরুত্ব

রুচিরা রায়, কম্পিউটার সায়েন্স এ্যান্ড ইঞ্জিনিয়ারিং, প্রথম বর্ষ

ফোনটা হাতে নিয়ে বসে রইলো ঋতু। অর্কর ফোনটা বেজে যাচ্ছে কিন্তু ও ফোনটা তুলছে না। হ্যাঁ অর্ক, সেই অর্ক যাকে প্রায় তিন মাস হলো নিজের মন দিয়ে বসে আছে ঋতু। সে এখন ব্যাঙ্গালোরে বিবিএ নিয়ে পড়াশোনা করছে। আলাপটা তার দাদাই করিয়ে দিয়েছিল। কিন্তু অর্কর internship চলার কারণে সেভাবে কোনদিনই সময় দিতে পারেনি। ঋতুই নিজের থেকে কথা বলা শুরু করেছে। ঋতুর অবশ্য ওর সবকিছুই ভালো লাগে। তার হাসি, তার কথা বলার স্টাইল, তার ফ্যাশন সেন্স। তবে এই তিন মাসে কোনদিনই নিজের থেকে মেসেজ করেনি অর্ক। আজ ঋতুর কলটাও ধরল না। ঋতুর কিছু ভালো লাগছিল না। ঠিক সেই সময় মেসেজটা ঢুকলো। অনির্বাণ।

"ফিজিক্সটা বুঝতে পেরেছিস তো? নাকি বলতে হবে?"

ঋতু মেসেজটা সিন করে রেখে দেয়। রিপ্লাই করে না।

ফোনের ডিসপ্লে তে আবার ভেসে ওঠে-

"কিরে ঠিক আছিস?"

বাধ্য হয়েই রিপ্লাই টা করলো ঋতু-হ্যাঁ।

"আচ্ছা, বাট তোর কোন প্রবলেম হলে বলতে পারিস।"

"হুমম"।

পাঁচ সেকেন্ডের মধ্যে স্ক্রিনে ভেসে উঠলো অনির্বাণের নাম। অনির্বাণ ফোন করেছে।

ফোনটা ধরার ইচ্ছা না থাকা সত্ত্বেও ফোনটা তুললো ঋতু।

"বল"-ফোনটা তুলেই বললো ঋতু।

"কিরে? কি ব্যাপার? মুখটাকে ওরকম বাংলার পাঁচের মত করে কেন বসে আছিস?"

"আরে কিছু না, ছাড় না।"

"হ্যাঁ সে আমি তোকে ছাড়তেই পারি.... কিন্তু তার জন্য তো তোকে ধরতে হবে কিন্তু আমি তো তোকে ধরিনি"

"উফ! সারাক্ষণ শুধু ইয়ার্কি না?"

"আরে ইয়ার্কি কোথায় করলাম!"

"তুই রাখ।"

"কিন্তু তুই মুখটা বাংলার ৫ এর মত করলে তোকে পুরো মিস হালুম এর মত লাগে জানিস?"

"এই কে মিস হালুম?"

"ওই আমাদের স্কুলের ম্যাথের টিচার।"

"ইসসস! কি যাতা।"- বলেই হেসে ফেলল ঋতু।

"চল ঠিক আছে এবার আমি রাখছি।"

"উমম শোন... থ্যাঙ্ক ইউ। মুডটা সত্যি খুব খারাপ ছিল কিন্তু তুই ঠিক করে দিলি" বলল ঋতু।

"নেভার মাইন্ড।"

বলে ফোনটা কেটে দেয় অনির্বাণ। ঋতুর মুড এখন পারফেক্ট। ঋতু জানে অনির্বাণ ওকে পছন্দ করে। অনির্বাণ ছেলেটা মন্দ নয়। কিন্তু অর্কের জন্য ও কারোর দিকেই ইন্টারেস্ট দেখায়নি। কিন্তু আজ অনির্বাণ এর জন্য একটা আলাদা ভালো লাগার সৃষ্টি হয়।

কেটে যায় আরো এক সপ্তাহ। এর মধ্যে ঠিক যেমন অর্কর সাথে একবারও কথা হয়নি ঠিক তেমনি অনির্বাণ এর সাথে কথা বলা বেড়েছে ঋতুর। আরো ভালো বন্ধু হয়ে উঠেছে অনির্বাণ এবং ঋতু। এখন তারা একে অপরের সম্বন্ধে বেশ অনেক কিছুই জানে। এখন প্রতিদিনই সন্ধ্যেবেলায় অনির্বাণ ঋতুকে পড়ায়। আর ঋতুও এ ব্যাপারটাকে বেশ ইনজয় করে। আর এভাবেই আস্তে আস্তে ঋতুরও অনির্বাণকে পছন্দ হতে থাকে। আর অনির্বাণ এর ছোট ছোট এফোর্টস গুলো আরো বেশি পছন্দ হতে থাকে। ঠিক এভাবেই একদিন পড়ানোর সময় ফোন করে অনির্বাণ।

"চল আজকে প্রথমে তাহলে আমরা অংকটা করি।" বলল অনির্বাণ।

ঋতুর পড়ার ইচ্ছা ছিল না।

তাই অনির্বাণকে ডিস্ট্র্যাক্ট করতে ও বলে উঠলো "আচ্ছা তুই আমাকে চিনলি কিভাবে?"

"ওই ওরিয়েন্টেশনের দিন তোকে অডিটোরিয়ামে দেখেছিলাম।"

"ও আচ্ছা।"

"এই দেখ আজ আমার এই হাতে কুটু আঁচড়ে দিয়েছে।"

কুটু হল অনির্বাণের পোষা খরগোশ।

"কই দেখি দেখি?" বলল ঋতু।

ভিডিও কল করে অনির্বাণ নিজের আঁচড়টা দেখায়।

ঋতু হেসে বলে উঠল- "বেশ হয়েছে"।

"সেই তো তোর তো ভালোই লাগবে তাই না", অভিমান দেখিয়ে বলল অনির্বাণ।

"ব্যাস আবার রাগ হয়ে গেল অমনি তোর।"

"আমি কারোর উপর রাগ করিনি", আরো কিছুটা অভিমান দেখিয়ে বলল অনির্বাণ। "তুই যা তো, আজ তোকে আর পড়তে হবে না।"
অনির্বাণের রাগ ভাঙ্গাতে ঋতু বললো- "উফ আচ্ছা বাবা সরি, নে, কান ধরবো?"
বলেই কান ধরল ঋতু।
রিতুকে ওভাবে দেখে হেসে উঠলো অনির্বাণ। ঋতুও হেসে ওঠে।
"উফ হয়েছে তোর রাগ ভেঙেছে?"
"উমম।"
"আচ্ছা শোন তোকে একটা কথা বলার আছে" - বলল অনির্বাণ।
"উমম বল।"
"আসলে আমি না... মানে আসলে আমি... না মানে আমি..."
"এই কি হয়েছে? কি তখন থেকে আমি, আসলে, না মানে, কি করে যাচ্ছিস ঠিক করে বল।" ধমক দিয়ে বলে ওঠে ঋতু।
"উমম, আসলে আমার তোকে ভালো লাগে।" এক নিঃশ্বাসে বলে দেয় অনির্বাণ।
ঋতু চুপ করে থাকে। ওই কথায় আছে না - মৌনতায় সম্মতির লক্ষণ।
"কিরে কিছু বল?"
"আচ্ছা" -বলে উঠলো ঋতু।
অনির্বাণ এর মানে জানে। অনির্বাণ জানে এর মানে- "হ্যাঁ"
"আচ্ছা তোর আমাকে কেন ভালো লাগে বলতো?" প্রশ্ন করল ঋতু।
"আসলে তোর চোখ দুটো আর গলার স্বরটা আমার ভীষণ ভালো লাগে। আর সেখান থেকেই তোকে ভালো লাগা।"
এটা শুনে লজ্জায় লাল হয়ে যায় ঋতু।
"আচ্ছা" বলেই ফোনটা তড়িঘড়ি রেখে দেয় ঋতু।
ফোনের দুপারে দুজন হেসে ওঠে।
আজ ঋতু ভীষণ খুশি। ওই কথায় আছে না God always have better plan than yours। এই কথাটা আজ ঋতুর লাইফে সত্যি হলো।
ফোনটা হাতে নিয়ে অর্কর নাম্বারটা ব্লক করলো ঋতু। সে আজ থেকে আর অর্ককে নিয়ে ভাববে না। সে আজ থেকে শুধু তাদেরই গুরুত্ব দেবে, যাদের কাছে তার গুরুত্ব আছে। যেমন অনির্বাণ। এটা ভাবতেই ঋতুর ঠোঁটে এক চিলতে হাসি ফুটে ওঠে।

Paint Brush

Sinchan Datta
CE, 3rd Year

Sayantika Choudhuri
CSE, 1st Year

Pritha Bose
ECE, 1st Year

Sanchari Nandi
ECE, 2nd Year

Anjita Darnal
EE, 3rd Year

Dr. Soumya Banerjee
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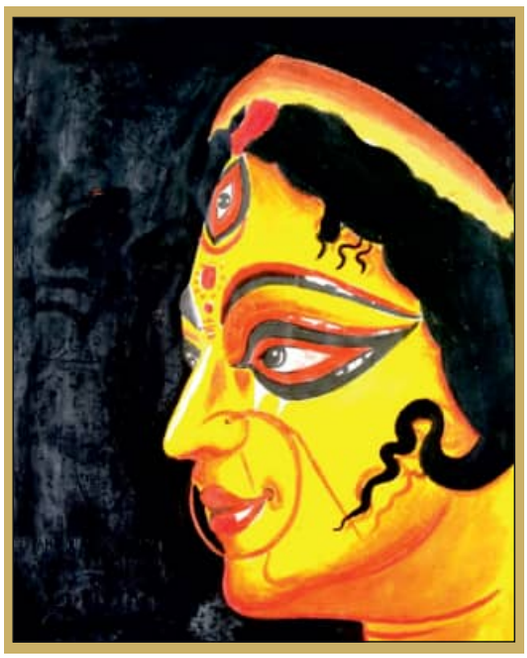
CSE, 2nd Year



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Saikat Dey
CE,2nd Year

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Sohona Mondal
CSE, 2nd Year

Sarit Kundu
CE, 4th Year

Soma Koner
ECE, 2nd Year

TECHIE TALK

GENERAL INFORMATION AND RECENT RESEARCH FINDINGS ON SARS-COV-2

Dr. Abhranil De
Assistant Professor,Department of Basic Science & Humanities

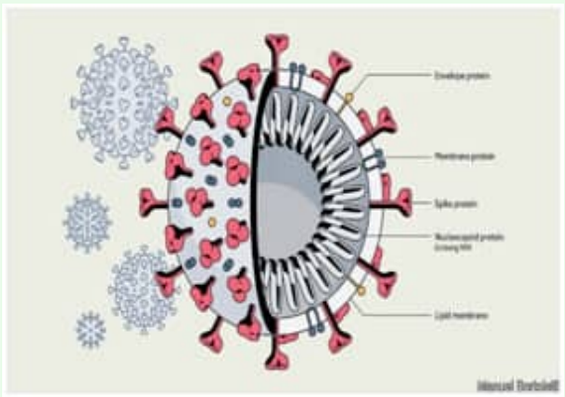

Fig. SARS-CoV-2 structure

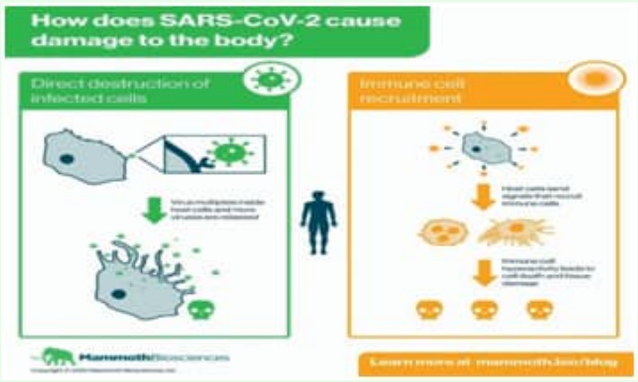

Fig. How human body is infected by SARS-CoV-2

Current Situation of SARS-CoV-2 Epidemic

In December 2019, the World Health Organization (WHO) was informed about an outbreak of pneumonia in Wuhan, Hubei Province, China, and the etiology was not identified. On January 30, 2020, WHO declared that the severe acute respiratory syndrome coronavirus 2 (SARS-CoV-2) epidemic is a public health emergency of international concern (PHEIC). On February 11, 2020, the WHO officially named the current outbreak of coronavirus disease as Coronavirus Disease-2019 (COVID-19) and the International Committee on Taxonomy of Viruses (ICTV) named the virus as SARS-CoV-2). Data as received by WHO from national authorities by October 11, 2020, there were more than 37 million confirmed cases with COVID-19 and 1 million deaths. Globally, the United States, India, and Brazil are the three countries with the largest cumulative number of confirmed cases in the world.

The Origin and Evolution of SARS-CoV-2

Bioinformatic analyses showed that SARS-CoV-2 had characteristics typical of coronavirus family. It belongs to the betacoronavirus 2B lineage. Early in the pneumonia epidemic in Wuhan, scientists obtained the complete genome sequences from five patients infected with SARS-CoV-2. These genome sequences share 79.5% sequence identity to SARS-CoV. Obviously, SARS-CoV-2 is divergent from SARS-CoV. It is considered to be a new betacoronavirus that infects human. Scientists aligned the full-length genome sequence of SARS-CoV-2 and other available genomes of betacoronaviruses. Results indicate the closest relationship of SARS-CoV-2 with the bat SARS-like coronavirus strain BatCov RaTG13, with an identity of 96%. These studies suggest that SARS-CoV-2 could be of bat origin, and SARS-CoV-2 might be naturally evolved from bat coronavirus RaTG13.

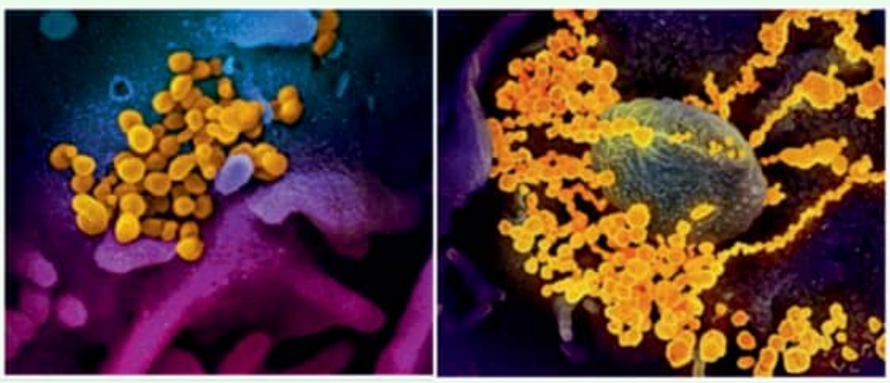

Fig. Digitally colourised scanning electron micrographs of SARS-CoV-2 virions (yellow) emerging from human cells cultured in a laboratory

The Epidemiological Characteristics of COVID-19

Bats appear to be the natural reservoir of SARS-CoV-2. In one study, betacoronavirus isolated from pangolins has a sequence similarity of up to 99% with the currently infected human strain. Another study indicates that SARS-CoV-2 and the coronavirus from a pangolin in Malaysia has high genetic similarity. The gene similarity between these two viruses in terms of E, M, N, and S genes is 100, 98.6, 97.8, and 90.7%, respectively, suggesting the potential for pangolins to be the intermediate host. Among the animals in close contact with humans, dogs, chickens, ducks, and pigs are not permissive to infection. SARS-CoV-2 replicates efficiently in cats and ferrets. SARS-CoV-2 can also transmit in golden hamster.

SARS-CoV-2 is transmitted via fomites and droplets during close unprotected contact between the infected and uninfected. Symptomatic and asymptomatic patients are the main source of infection. The virus can also spread through indirect contact transmission. Virus-containing droplets contaminate hands, people then contact the mucous membranes of the mouth, nose, and eyes, causing infection. The transmission of SARS-CoV-2 is not limited to the respiratory tract. Some studies have demonstrated the aerosol transmission of SARS-CoV-2. During the COVID-19 outbreak, one study investigated the aerodynamic nature of SARS-CoV-2 by measuring viral RNA in aerosols in two Wuhan hospitals, indicating that SARS-CoV-2 has the potential to spread through aerosols. There may be a possibility of airborne transmission in health care facilities due to aerosols generated by medical procedures. Of note, in the spread of COVID-19, airborne transmission is the dominant route. In some pediatric SARS-CoV-2 infection cases, although children's nasopharyngeal swabs are negative, rectal swabs are consistently positive, indicating the possibility of fecal-oral transmission. Recent studies demonstrate that SARS-CoV-2 could replicate effectively in human intestinal organoids and intestinal epithelium. As a result, SARS-CoV-2 has the potential to spread through intestinal tract. SARS-CoV-2 can also infect the intestinal cells of bats. A COVID-19 patient's urine also contains infectious SARS-CoV-2. After studying COVID-19 infection in nine pregnant women, the result suggests that there is no evidence that pregnant women who were infected SARS-CoV-2 in late pregnancy can transmit the virus to infant through intrauterine vertical transmission. However, recently, some studies demonstrated the possibility of vertical transmission of SARS-CoV-2. In one case, the newborn whose mother was diagnosed with SARS-CoV-2 in the last trimester was infected with SARS-CoV-2, with neurological compromise. In another case, the cytokine levels and anti-SARS-CoV-2 IgM antibodies of the neonate is higher than normal, with no physical contact, suggesting the possibility of transplacental transmission. The risk of perinatal transmission of SARS-CoV-2 is relatively low. Compared with SARS-CoV-2, pregnant women infected with SARS and MERS showed more severe symptoms, such as miscarriage and abortion. The major spread route of SARS-CoV-2 is person-to-person, it could happen in family, hospital, community, and other gathering of people. Most cases of the person-to-person transmission of the early stage in China happened in family clusters. This kind of spreading has the possibility to occur during the incubation period. It is worth noting that SARS-CoV-2 has high transmissibility during asymptomatic period or mild disease. SARS-CoV-2 can also transmit from human to animal. Some animals, such as tiger, dog, and cat, are found to be infected with the virus through close contact with the infected people. A 17-years-old dog in Hong Kong was affected and it was the first case of human-to-animal transmission

One study shows that the viral genetic sequences of SARS-CoV-2 detected in two dogs are the same with the SARS-CoV-2 in the corresponding human cases, suggesting the human-to-animal transmission. However, it remains unknown whether infected dogs can transmit the virus back to humans. SARS-CoV-2 is believed to transmit from the animal kingdom to human. According to the sequence analysis, bats are natural hosts for SARS-CoV-2. SARS-CoV-2 and the coronavirus from a pangolin in Malaysia have high genetic similarity, and the CoVs isolated from pangolins have the highest closeness to SARS-CoV-2, suggesting the potential for pangolins to be the intermediate host. The intermediate hosts could transmit the virus to susceptible people, leading to the newly appear diseases in humans. SARS-CoV-2 can also transmit between animals. SARS-CoV-2 infected cats could transmit the virus to naïve cats with close contact. SARS-CoV-2 could also transmit in naïve ferrets, through direct or indirect contact.

According to current observed epidemiologic characteristics, everyone is considered susceptible and the median age is about 50 years.

The clinical manifestations differ with age. One study indicates that the cases over 60 years old have higher levels of blood urea nitrogen, inflammatory indicators, and more lobes bilateral lesions. The patients older than 60 years old have a greater chance of respiratory failure and longer disease courses. However, in those under 60, the severity is milder (Liu et al., 2020). One study reports a total of 72,314 confirmed cases in China, the majority of the patients (87%) are between the ages of 30 and 79. In the group no older than nine, no deaths occurred. However, in the group aged 70–79 years, the case-fatality rate (CFR) is 8.0%, in the group aged 80 years and older, the CFR is 14.8%. As to the patients with different comorbid conditions, such as cardiovascular disease, diabetes, chronic respiratory disease, hypertension, and cancer, the CFR is 10.5, 7.3, 6.3, 6.0, and 5.6%, respectively. These results suggest that comorbid conditions are high risk factors for COVID-19 patients and higher fatality rates are observed than those without underlying diseases. Among the 1,099 cases confirmed with COVID-19, patients with severe disease were 7 years older than those with non-severe disease. Of the 1,391 infected children, the median age is 6.7 years and most children show milder symptoms (non-pneumonia or mild pneumonia) than adults. The patients who aged ≥65 years old have a higher risk of mortality from COVID-19, especially the patients with acute respiratory distress syndrome (ARDS) and comorbidities.

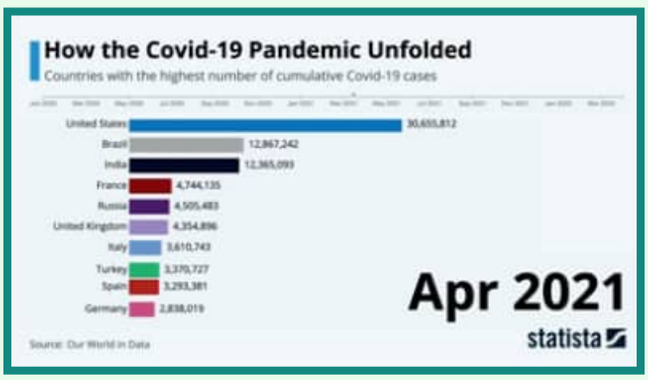

Fig. Countries with the highest number of cumulative Covid-19 cases

Clinical Characteristics of COVID-19

The most common manifestations of COVID-19 are fever and dry cough. The majority of the patients showed bilateral pneumonia. Old males with comorbidities are more likely to be affected by SARS-CoV-2. The blood counts of patients showed leucopenia and lymphopenia. The content of IL2, IL7, IL10, GSCF, IP10, MCP1, MIP1A, and TNF in the plasma of ICU patients is higher than non-ICU patients.

COVID-19 is divided into three levels according to the severity of the disease: mild, severe, and critical. The majority of patients only have mild symptoms and recover. Asymptomatic infection cases were also reported, but most of the asymptomatic patients went on to develop disease since the data of identification. Besides respiratory illness, COVID-19 disease could lead to myocardial injury and arrhythmic complications, neurological complications, such as myalgia, headache, dizziness, impaired consciousness, intracranial hemorrhage, hypogeusia, and hyposmia, and even stroke. Digestive symptoms and liver injury, hypercoagulability and thrombotic complications have also been reported. Critical patients could quickly progress to ARDS, hard-to-correct metabolic acidosis, septic shock, coagulation dysfunction, and multiple organ functional failure. Severe complications included ARDS, RNAaemia (detectable serum SARS-CoV-2 viral load), multiple organ failure, and acute cardiac injury. About 26.1% patients were admitted to the ICU because of complications caused by COVID-19. With proper diagnosis and treatments for COVID-19, most patients had a good prognosis. The elderly and the patients with underlying diseases have worse prognosis.

Structure-Based SARS-CoV-2 Inhibitors

Currently, some small-molecule compounds have been developed which showed inhibitory effects on the SARS-CoV-2 infection, as described below.

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Remdesivir

Remdesivir is an adenosine analogue and is a potent inhibitor of RdRp. Remdesivir could potently inhibit the replication of SARS-CoV-2 in vitro. Remdesivir shows broad-spectrum antiviral effects against RNA virus infection in cultured cells, nonhuman primate models, and mice. As an adenosine analogue, remdesivir functions after virus entry, via incorporating into nascent viral RNA to terminate the replication before the RNA become mature. Remdesivir is a kind of prodrug. In target cells, it would transform into the triphosphate form (RTP) and become active. Like other nucleotide analog prodrugs, remdesivir inhibits the RdRp activity through covalently binds the primer strand to terminate RNA chain. Upon adding ATP, the nsp12-nsp7-nsp8 complex exhibits the function of RNA polymerase. However, with the addition of the active triphosphate form of remdesivir (RTP), the RNA polymerization activity would be significantly inhibited. The structure of the apo RdRp is composed of nsp12, nsp7, and nsp8.

Similar to remdesivir, favipiravir is also an inhibitor of the RdRp. The structure of favipiravir resembles the endogenous guanine. Clinical trial demonstrated that favipiravir had little side effect as the first anti-SARS-CoV-2 compound conducted in China.

N3

A mechanism-based inhibitor, N3, which was identified by the drug design aided by computer, could fit inside the substrate-binding pocket of the main protein and is a potent irreversible inhibitor of the main protein. Two of the Mpro-N3 complex associate to form a dimer (the two complexes are named protomer A and protomer B, respectively). Each protomer contains three domains which are designated as domain I–III. Both domain I and domain II have a -barrel structure arranged in antiparallel manner. Domain III has five -helices which associate to form a globular cluster structure in antiparallel manner. Domain III connects to domain II with a long loop. The cleft between domain I and domain II contains the substrate binding site. The backbone atoms of the compound N3 form an antiparallel sheet with residues 189–191 of the loop that connects domain II and domain III on one side, and with residues 164–168 of the long strand (residues 155–168) on the other.

11a and 11b

Two compounds, namely 11a and 11b which target the Mpro, exhibit excellent inhibitory effects on SARS-CoV-2 infection in vitro. The inhibitory activity of 11a and 11b at 1 μM is 100 and 96%. In vivo, the 11a and 11b exhibit good pharmacokinetics (PK) properties. Of note, 11a showed low toxicity as well. The -CHO group of 11a and 11b bond to the cysteine 145 of Mpro covalently. Different parts of 11a (designated as P1', P1, P2, and P3) fits into different parts of the substrate-binding site. The (S)- -lactam ring of 11a at P1 inserts into the S1 site. The cyclohexyl moiety of 11a at P2 fits into the S2 site. At the part P3 of 11a, the indole group is exposed to the S4 site (in the solvent). The oxygen atom of -CHO forms a hydrogen bond with the cysteine 145 in the S1' site. In addition, many water molecules (designated as W1–W6) are critical for binding 11a. The SARS-CoV-2 Mpro-11b complex is similar to the SARS-CoV-2 Mpro-11a complex and the 11a and 11b exhibit similar inhibitor binding mode).

Vaccines of SARS-CoV-2

It is urgent to develop effective and safe vaccines to control the new occurrence of COVID-19 and to reduce SARS-CoV-2-infection-related morbidity and mortality). Chinese Health Commission announced that more than five kinds of vaccines are currently developed for COVID-19 in China, including subunit protein vaccine, nucleic acid vaccine, inactivated vaccine, adenoviral vector vaccine, and influenza viral vector vaccine. As of October 17, 2020, there are 177 vaccine candidates for COVID-19 and 54 are in human trials in the world. For example, the non-replicating Ad5 vectored COVID-19 vaccine produced by CanSino Biologics lnc, the mRNA-1273 COVID-19 vaccine developed by Moderna, the DNA vaccine of Inovio Pharmaceuticals, the BioNTech's mRNA COVID-19 vaccine, the vaccine ChAdOx1 nCoV-19 of University of Oxford, the adenovirus serotype 26 vector-based vaccine Ad26.COV2.S, the Novavax's protein subunit vaccine NVX-CoV2373, the Sinovac's inactive vaccine CoronaVac, the Chulalongkorn University's mRNA vaccine ChulaCov19, etc. Currently, clinically approved vaccines are not widely available The safety and efficacy of the vaccines should be kept in mind in the efforts of vaccine development. Following are some notable SARS-CoV-2 vaccines in development.

mRNA-1273

Moderna's mRNA-based vaccine stimulates the expression of target antigen after injection of mRNA encapsulated in nanoparticles. The vaccine is called mRNA-1273, it is a synthetic mRNA strand, which can encode the viral spike protein that is stable before fusion. After being injected into the body intramuscularly, the vaccine mRNA-1273 could stimulate antiviral response that targets the spike protein of SARS-CoV-2 specifically. Different from conventional route of vaccine development, the lipid mRNA nanoparticle-encapsulated mRNA vaccine can be synthesized and made without the virus. At present, mRNA-1273 has completed phase I clinical trial and phase II clinical trial. The results of the mRNA-1273 vaccine phase I clinical trial in 45 healthy adults (18–55 years old) show a strong antibody and cellular immune response in participants and no safety concerns are identified. Phase II clinical trial is a dose-conformation study used to evaluate the safety, reactogenicity, and immunogenicity of mRNA-1273 in healthy adults. The phase III clinical trial has started on July 27, 2020. This is a randomized, stratified study to evaluate the efficacy, immunogenicity, and safety of the vaccine in healthy adults.

PiCoVacc

In a recent study, a purified inactivated SARS-CoV-2 virus vaccine candidate (PiCoVacc) is developed in a pilot-scale production. The target of PiCoVacc is the entire virus. The study indicated that PiCoVacc could induce neutralizing antibodies which neutralized 10 representative SARS-CoV-2 strains in mice, rats, and non-human primates, suggesting its strong potential to neutralizing the other SARS-CoV-2 strains that are circulating. Six g per dose of the PiCoVacc could protect the macaques from SARS-CoV-2 infection completely and systematic evaluation suggests its safety.

DNA Vaccines

A recent study has produced a series of DNA vaccine candidates which express six variants of the spike protein of the SARS-CoV-2. DNA vaccines targets the spike protein of SARS-CoV-2. The candidates were evaluated in 35 rhesus macaques. At week 0 and week 3, rhesus macaques were injected 5 mg DNA vaccines intramuscularly. S-specific binding antibodies and neutralizing antibodies (NAbs) were detected after the boost immunization at week 5. Neutralizing antibody (NAb) titers in the vaccinated macaques were comparable to the Nab titers in 9 convalescent rhesus macaques and 27 convalescent patients who were infected with SARS-CoV-2. Cellular immune responses targeting the S peptides were observed in most of the vaccinated rhesus macaques at week 5. At week 6, all rhesus macaques were challenged with 1.2×108 VP SARS-CoV-2 intranasally and intratracheally. Compared to the control groups, lower levels of SARS-CoV-2 RNA were observed in the vaccine groups. Reduced levels of subgenomic mRNA (sgmRNA) in bronchoalveolar lavage (BAL) and nasal swabs (NS) were observed in vaccine groups. In conclusion, these DNA vaccines prevent rhesus macaques from being infected by SARS-CoV-2 and may accelerate the development of SARS-CoV-2 vaccine which are urgently needed to protect humans from SARS-CoV-2 infections.

A Universal Betacoronavirus Vaccine Against COVID-19, MERS, and SARS

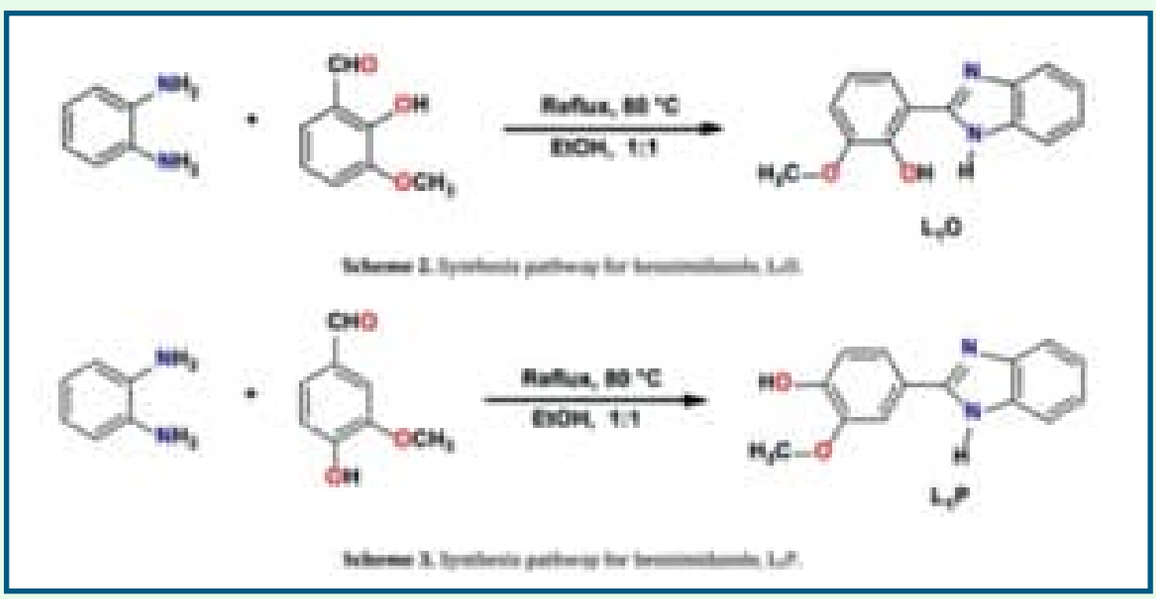
The RBD of coronaviruses is an attractive vaccine target. However, RBD-based vaccines have relatively low immunogenicity. One study describes the dimeric form of MERS-CoV RBD. Compared to monomeric form, the RBD-dimer could expose double receptor-binding motifs and increase neutralizing antibody (NAb) titers significantly, so as to overcome the limitation of low immunogenicity. RBD-sc-dimer is a stable version of RBD-dimer with high vaccine efficacy. When using this strategy to design vaccines against SARS and COVID-19, 10–100-fold enhancement of Nab titers were achieved. Notably, the Nab titers caused by two-dose of RBD-sc-dimer is much higher than the RBD-sc-dimer, reaching ~4,096.

On June 23, 2020, the clinical phase III trial of the inactivated SARS-CoV-2 vaccine developed by the SINOPHARM CNBG launched officially. This is the first international clinical phase III trial of inactivated SARS-CoV-2 vaccine. The clinical phase III trial takes about half a year to evaluate the safety and effectiveness of the vaccine in a larger population.

Our recent research findings

Recently, our research group has successfully designed and synthesized an indole-substituted benzimidazole and 5-membered hetero-cyclic benzimidazole and explored their SARS-CoV-2 screening activities through computational modeling. Our entire team is grateful to Eurj- Chem (European Journal of Chemistry) for acknowledging this novel work).

In this paper, we report the design and synthesis of an isomeric pair of mono-substituted benzimidazoles with their structural characterization. SARS-CoV-2 shatters the socio-economic status of humans to a great extent. Unprecedented infection by SARS-CoV-2 variants not only severely damages civilization but imposes a significant restriction on scientific development. In particular,2019-nCoV is a virus of the Coronaviridae familyand bats are considered a source of development of beta-corona viruses. Characteristically, SARS-CoV-2 infection leads totrifling flu into a fatal health emergency.Furthermore, SARS-CoV-2 contagion can lead to acute respiratory failure, which ultimately leads to death. However, life-threatening issues such as persistent viral load and organ-specific complications, along with compromised antiviral resistance, are likely to influence the regulation of coronavirus disease. Hence, examination, evaluation, and critical studies of fundamental cellular technologies have gained tremendous attention among the scientific community. In addition to that, synthetic chemists and biologists have made significant efforts in the design and production of molecular therapeutics. Furthermore, the sincere efforts of scientists and health warriors in combating health emergencies are laudable. Truly, the immense effort to make significant progress in health and medical science to tackle SARS-CoV-2 infection enforces significant progress to overcome the pandemic instead of the huge population across the globe.



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DATA SCIENCE

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About Data Science

Data science is the field of study that combines domain expertise, programming skills, and knowledge of mathematics and statistics to extract meaningful insights from data. Data science practitioners apply machine learning algorithms to numbers, text, images, video, audio, and more to produce artificial intelligence (AI) systems to perform tasks that ordinarily require human intelligence. In turn, these systems generate insights which analysts and business users can translate into tangible business value.

What does a Data Scientist do?

Data scientists have become assets across the globe and are present in almost all organizations. These professionals are well-rounded, analytical individuals with high-level technical skills who can build complex quantitative algorithms to organize and synthesize large amounts of information used to answer questions and drive strategy in their organizations. They also have the communication and leadership experience to deliver tangible results to various stakeholders across an organization or business.

Data scientists are typically curious and result-oriented, with exceptional industry-specific knowledge and communication skills that allow them to explain highly technical results to their non-technical counterparts. They possess a strong quantitative background in statistics and linear algebra as well as programming knowledge with focuses in data warehousing, mining, and modeling to build and analyze algorithms.

They also use key technical tools and skills, including: R, Python, Apache Hadoop, MapReduce, Apache Spark, NoSQL databases, Cloud computing, D3, Apache Pig, Tableau, iPython notebooks, GitHub, etc.

Lifecycle of Data Science

The Data Science Lifecycle is an extensive step-by-step guide that illustrates how machine learning and other analytical techniques can be used to generate insights and predictions from data to accomplish a business objective. Several processes are taken during the entire process, including data preparation, cleaning, modeling, and model evaluation. The process is lengthy and could take several months to finish.

Step 1: Problem Identification and Planning

The first step in the data science project life cycle is to identify the problem that needs to be solved. This involves understanding the business requirements and the goals of the project. Once the problem has been identified, the data science team will plan the project by determining the data sources, the data collection process, and the analytical methods that will be used.

Step 2: Data Collection

The second step in the data science project life cycle is data collection. This involves collecting the data that will be used in the analysis. The data science team must ensure that the data is accurate, complete, and relevant to the problem being solved.

Step 3: Data Preparation

The third step in the data science project life cycle is data preparation. This involves cleaning and transforming the data to make it suitable for analysis. The data science team will remove any duplicates, missing values, or irrelevant data from the dataset. They will also transform the data into a format that is suitable for analysis.

Step 4: Data Analysis

The fourth step in the data science project life cycle is data analysis. This involves applying analytical methods to the data to extract insights and patterns. The data science team may use techniques such as regression analysis, clustering, or machine learning algorithms to analyze the data.

Step 5: Model Building

The fifth step in the data science project life cycle is model building. This involves building a predictive model that can be used to make predictions based on the data analysis. The data science team will use the insights and patterns from the data analysis to build a model that can predict future outcomes.

Step 6: Model Evaluation

The sixth step in the data science project life cycle is model evaluation. This involves evaluating the performance of the predictive model to ensure that it is accurate and reliable. The data science team will test the model using a validation dataset to determine its accuracy and performance.

Step 7: Model Deployment

The final step in the data science project life cycle is model deployment. This involves deploying the predictive model into production so that it can be used to make predictions in real-world scenarios. The deployment process involves integrating the model into the existing business processes and systems to ensure that it can be used effectively.

ELECTRIC INJURY AND ITS EFFECTS

Debasish Bose
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SAFE WORKING REGULATION FOR ELECTRICAL EQUIPMENT AS PER INDIAN ELECTRICITY RULE:

• LOW VOLTAGE: Where the voltage does not exceed 250 volt under normal conditions, subject however to 6% variation.

• MEDIUM VOLTAGE: Where the voltage is more than 250 volts but does not exceed 650 volts under normal conditions, subject however to 6 % variation.

• HIGH VOLTAGE: Where the voltage is more than 650 volt but does not exceed 33 kilo volt under normal condition, subject however to 6 % variation on higher side and 9 % variation on lower side.

• EXTRA HIGH VOLTAGE: Where the voltage exceeds 33 kilo volt and the voltage variation shall not exceed 12.5 %.

ELECTRIC INJURY:

Electric Injury is a physiological reaction caused by electric current passing through the body. Electric shock occurs upon contact of a (human) body part with any source of electricity that causes a sufficient magnitude of current to pass through the victim's flesh, viscera or hair. Physical contact with energized wiring or devices is the most common cause of an electric shock. In cases of exposure to high voltages, such as on a power transmission tower, physical contact with energized wiring or objects may not be necessary to cause electric shock, as the voltage may be sufficient to "jump" the air gap between the electrical device and the victim.

The lethality of an electric shock is dependent on several variables:

1. Current. The higher the current, the more likely it is lethal. Since in a linear circuit, current is proportional to voltage when resistance is fixed, high voltage is an indirect risk for producing higher currents.

2. Duration. The longer the duration, the more likely it is lethal—safety switches may limit time of current flow

3. Pathway. If current flows through the heart muscle, it is more likely to be lethal.

4. High Voltage (over about 600 volts). In addition to greater current flow,

5. High voltage may cause dielectric breakdown at the skin, thus lowering skin resistance and allowing further increased current flow.

6. Electrical workers are frequently in close proximity to energized parts where power arcs can occur.

7. High voltage may cause current flow through the air from one conductive surface to another if the voltage is great enough and conditions are right.

8. The conductive material is vaporized by temperatures in an arc which can be as high as 35000 degree Fahrenheit.

9. It is sometimes suggested that human lethality is most common with alternating current at 100–250 volts; however, death has occurred below this range, with supplies as low as 42 volts. Assuming a steady current flow (as opposed to a shock from a capacitor or from static electricity), shocks above 2,700 volts is often fatal, with those above 11,000 volts being usually fatal.

10. The injury related to electric shock depends on the magnitude of the current. Very small currents may be imperceptible or produce a light tingling sensation. A shock caused by low current that would normally be harmless could startle an individual and cause injury due to suddenly jerking away from the source of electricity, resulting in one striking a stationary object, dropping an object being held or falling. Stronger currents may cause some degree of discomfort or pain, while more intense currents may induce involuntary muscle contractions, preventing the victim from breaking free of the source of electricity. Still larger currents usually result in tissue damage and may trigger fibrillation the heart or cardiac arrest, any of which may ultimately be fatal. If death results from an electric shock the cause of death is generally referred to as "electrocution".

11. Other issues affecting lethality are frequency, which is an issue in causing cardiac arrest or muscular spasms. Very high frequency electric current causes tissue burning, but does not penetrate the body far enough to cause cardiac arrest. Also important is the pathway: if the current passes through the chest or head, there is an increased chance of death. From a main circuit or power distribution panel the damage is more likely to be internal, leading to cardiac arrest. Another factor is that cardiac tissue has a chronaxie (response time) of about 3 milliseconds, so electricity at frequencies of higher than about 333 Hz requires more current to cause fibrillation than is required at lower frequencies.

12. The minimum current a human can feel depends on the current type (AC or DC) as well as frequency for AC. A person can feel at least 1 mili ampere (rms value) of AC at 60 Hz, while at least 5 mA for DC. At around 10 mA, AC current passing through the arm of a 68-kilogram (150 lb) human can cause powerful muscle contractions; the victim is unable to voluntarily control muscles and cannot release an electrified object. This is known as the "let go threshold" and is a criterion for shock hazard in electrical regulations.

13. If the voltage is less than 200 V, then the human skin, more precisely the stratum-corneum is the main contributor to the impedance of the body in the case of a macro shock—the passing of current between two contact points on the skin. The characteristics of the skin are non-linear however. If the voltage is above 450–600 V, then dielectric breakdown of the skin occurs. The protection offered by the skin is lowered by perspiration, and this is accelerated if electricity causes muscles to contract above the let-go threshold for a sustained period of time.

(The stratum-corneum is the outermost layer of the skin, consisting of keratinized cells. It is a semi permeable barrier that serves as a physiological barrier from external agents including bacteria, fungi, and chemicals while preventing the loss of fluids and solutes from the internal environment. It is thickest on the palms and soles.)

14. If an electrical circuit is established by electrodes introduced in the body, bypassing the skin, then the potential for lethality is much higher if a circuit through the heart is established. This is known as a micro shock. Currents of only 10 A can be sufficient to cause fibrillation in this case with a probability of 0.2%.

15. The current may, if it is high enough and is delivered at sufficient voltage, cause tissue damage or fibrillation which can cause cardiac arrest; more than 30 mA of AC (rms, 60 Hz) or 300 – 500 mA of DC at high voltage can cause fibrillation. A sustained electric shock from AC at 120 V, 60 Hz is an specially dangerous source of ventricular fibrillation because it usually exceeds the let-go threshold, while not delivering enough initial energy to propel the person away from the source. However, the potential seriousness of the shock depends on paths through the body that the currents take.

16. TYPES OF ELECTRICAL INJURIES

	EFFECTS
ELECTRIC SHOCK	1. Muscular contraction involving muscles.
	2. Asphyxiations involving lungs and respiratory organs.
	3. Fibrillation involving heart.
	4. Metal fume fever (inhaling metallic oxide fumes).
	5 .Hot lighting burn.

	EFFECTS
ELECTRIC BURN	1. Contact burn: most of the fires due to electric wire.
	2. Arc burn : many fires.
	3. Radiation burn from short circuit arching: It emits Ultra Violet rays and effect eyes.
	4. Vaporized metals.
	5. Deep burn and necrosis.
	6. Metal fume fever (inhaling metallic oxide fumes).
	7. Hot lighting burn.

SMOKE	EFFECTS
Transformer fire causes an enveloping smoke.	1. Electrolytic corrosion.
	2. Electric and magnetic field effect on man, equipment and vegetation.
	3. High sound noise.
	4. Thunders and barrel fuse blow.
	5. Release of toxic gasses during faulty operation.
	6. Mechanical fall damage.

FIRE	EFFECTS
Explosion due to spark/ heat in explosive environment.	Production of heat and burn.
	Damage of instruments or life.

PURPOSE OF THE "DANGER" ELECTRICITY SIGN:

Electrical hazard signs are a danger sign, meaning they are used to highlight risks that are likely to result in death .It is generally used where the voltage is equal or above 415 volts.

As per the Indian Electricity rule, it should be written in English, Hindi and the main language of the place/State.

A typical "danger sign board" is shown below-

ELECTRICAL SAFETY IN LABORATORY WORKS

1. If electrical wire needed to pass on the floor should be laid down on floor where no one can trip on them or get caught in them.
2. Hands and laboratory area should be dry before using electrical equipment.
3. We should never poke anything into electrical outlets.
4. We must unplug by pulling the plug and not pulling the cord.
5. We must turn off and unplug all electrical equipment as soon as the work is finished.

Acknowledgement: Prof. Dr. Prasanta Sarkar and Dr. Subrata Mondal of **NITTTR**, Kolkata

CRYPTOGRAPHIC CHRONICLES

Rupkatha Roy
Computer Science and Engineering, 2nd Year

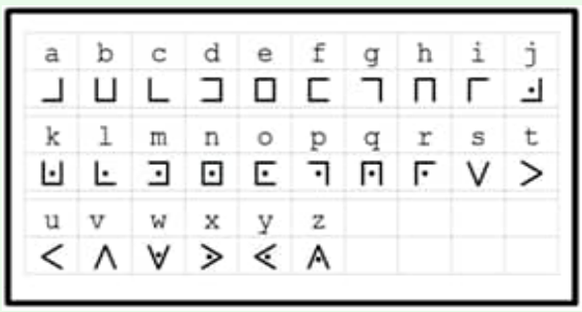
Have you ever used secret messages to communicate something? I bet you have! It's a clever way to convey a message without revealing too much information. In this way, messages are secured and can only be deciphered between the sender and recipient. This method of writing secret codes to maintain security and privacy is known as cryptography while the science of secure communication is known as cryptology.

WHAT IS CRYPTOGRAPHY?

• Cryptography is a technique that involves securing information and communications through the use of codes. This ensures that only those who are authorized to access the information can understand and process it, thereby preventing unauthorized access. The word "crypt" means “hidden," and "graph" means "writing."

• Cryptography uses mathematical concepts and algorithms to convert messages in such a way that they are difficult to decode.

• These algorithms are used for cryptographic key generation, digital signing, and verification to protect data privacy, online browsing, and confidential transactions such as credit card and debit card transactions.

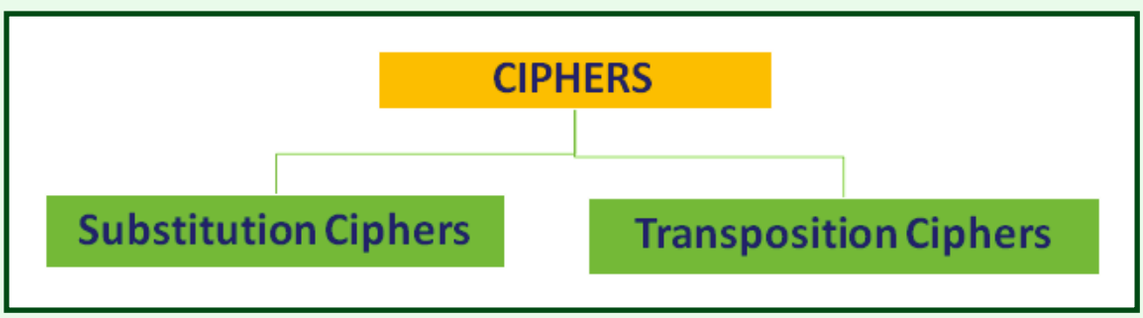


Well, we use some special symbols to make our messages distinct and private, Isn't it?
These symbols play an important role in keeping our message a secret. Such symbols are known as “codes” in cryptography. Codes substitute arbitrary symbols which include letters or numbers for the components of the original message.

Now, the recipient must decode this secret code to receive the message. Here comes the concept of “ciphers”.

WHAT IS CIPHER?

A cipher is a method of transforming a message or information to keep it secure from unauthorized access. It involves the use of an algorithm, often in the form of a mathematical function, to encode and decode information. The process of encoding is known as encryption, and the reverse process of decoding is called decryption.



(based on the method of substitution) **(based on method of Transposition)**

SUBSTITUTION CIPHERS:

Substitution ciphers involve the replacement of letters in the plaintext with other letters or symbols, while maintaining the order of the symbols. Julius Caesar, the Roman Emperor, invented the Caesar Cipher over two thousand years ago.

To encrypt the message 'A B C' we need the KEY. For each letter in the message, we move 6 spaces (KEY) in the alphabet.

A + 6 = G B + 6 = H C + 6 = I

The encrypted message is now 'GHI'

TRANSPOSITION CIPHER:

On the other hand, transposition ciphers preserve the original letters but rearrange their order.

Transposition cipher is a method of encryption in cryptography that scrambles the positions of characters in a message without changing the characters themselves. Units of plaintext are rearranged according to a specific system defined by a keyword, resulting in a ciphertext that is a permutation of the original plaintext.

For example, the keyword CODING is of length 6 (so the rows are of length 6), and the message LEARN CRYPTOGRAPHY AT ONCE! In a regular columnar transposition, we write this into the grid as follows:

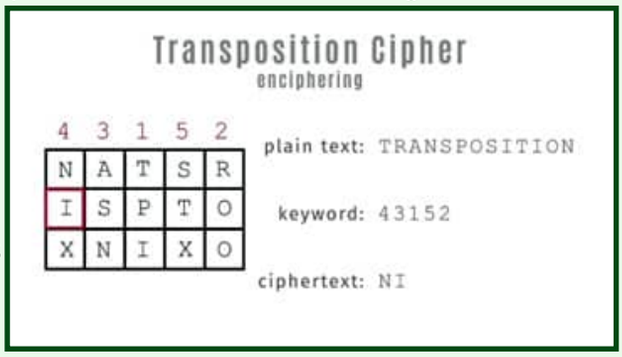
L E A R N C

R Y P T O G

R A P H Y A

T O N C E !

The output of either of these methods of encryption is



EFFECTIVENESS OF A CIPHER:

1. Firstly, the algorithm or method used to encipher the original message (known as the plaintext) must be understood.

2. Additionally, the key used with the algorithm must be known in order for the plaintext to be both enciphered and deciphered.

3. Lastly, the timeframe during which the key is valid should also be known to ensure timely and accurate decryption.

IMPORTANCE OF CRYPTOGRAPHY IN DIGITAL WORLD.

- Confidentiality: Encrypts data for privacy.
- Authentication: Verifies the identity of communicating parties.
- Non-repudiation: Prevents denial of message or signature.
- Secure Communication: Ensures confidentiality and integrity in digital communication.
- National Security: Critical for secure communication in government & military & scientific research.

RECENT CRYPTOGRAPHIC DEVELOPMENT:

In recent years, several cryptographic developments have shaped the landscape of digital security. Some notable trends and advancements include:

- Post-Quantum Cryptography (PQC): With the growing potential of quantum computers to break traditional cryptographic algorithms, the research and development of post-quantum cryptography have gained prominence. New cryptographic algorithms that resist attacks from quantum computers are being explored.
- Homomorphic Encryption: Homomorphic encryption allows computation on encrypted data without decrypting it first. This is valuable for privacy-preserving computation in cloud services and data processing scenarios.
- Blockchain and Cryptocurrencies: The rise of blockchain technology has introduced new cryptographic concepts. Blockchain relies on cryptographic algorithms for secure transactions, consensus mechanisms, and the creation of tamper-resistant ledgers.

APPLICATION AREAS OF CRYPTOGRAPHY

DIGITAL TECHNOLOGY

- Cybersecurity, Finance and Banking Government,Military, Internet of Things (IoT), Digital Signatures. When sharing genetic or bioinformatics data over networks, cryptographic techniques can be employed in biochemistry and molecular physics.

GEOLOGY:

- Secure Data Transmission: Cryptography ensures confidential and integral transmission of geological data among researchers, institutions, and survey agencies.
- Blockchain in Mineral Supply Chains: Applying blockchain, grounded in cryptographic principles, improves transparency and traceability in mineral supply chains, mitigating fraud risks and ensuring ethical sourcing.

ANTHROPOLOGY:

- Anthropological Research Privacy: Cryptography safeguards participant privacy through secure data storage and transmission methods.
- Cultural Artifact Authentication: Cryptographic techniques, like digital signatures, ensure the origin and integrity of historical records.

COMMONLY USED SOFTWARE/TOOLS/LANGUAGES USED FOR CRYPTOGRAPHY-BASED PROGRAMMING:

C: Commonly used for low-level cryptographic implementations.

Python: Popular for rapid prototyping and development of cryptographic algorithms.

Java: Widely used for implementing secure and portable cryptographic solutions.

OPENSSL:	**A robust open-source toolkit for the implementation of SSL and TLS protocols.**
CRYPTO++:	**A free C++ class library of cryptographic algorithms and schemes.**
PYCRYPTODOME:	**A self-contained Python package of low-level cryptographic primitives.**
INTEGRATED DEVELOPMENT ENVIRONMENTS (IDES):	**Visual Studio Code, Eclipse,**
PYCHARM:	**Common IDEs used for cryptographic programming in various languages.**

CRYPTOGRAPHIC LIBRARIES AND TOOLS:

COMMON CRYPTOGRAPHIC ALGORITHMS:

AES (Advanced Encryption Standard)

- **AES (Advanced Encryption Standard): Symmetric-key block cipher widely used for data encryption.**

RSA(Rivest–Shamir–Adleman)

- **Asymmetric algorithm used for secure data transmission and digital signatures.**

SHA(Secure Hash Algorithm 256-bit)

- **Cryptographic hash function commonly used in blockchain and digital signatures.**

CRYPTOGRAPHY AS A CAREER:

Cryptographer: Research and design cryptographic algorithms and protocols.

Security Engineer: Implement and maintain cryptographic solutions in software and systems.

Security Consultant: Advise organizations on cryptographic best practices and help secure their systems.

Blockchain Security Expert: Specialize in securing blockchain networks and applications.

MY TAKE ON CRYPTOGRAPHY USING C:

Here I have implemented a program based upon two step cryptographic algorithm where method of substitution and transposition ciphers both have been applied. Thus, the final cipher text derived from the original text significantly increases the complexity of the cipher text, making it challenging for unauthorized individuals to decipher without knowledge of the specific code or algorithm used in the encryption nullifying the chances of hacking. The program relies on a key generated from the word given by the sender.

FOR ENCRYPTION:

1. In this program the sender will input a keyword (e.g: token) and the original message(str).
2. Using genkey () function I have generated a secret code using the keyword.
3. To generate the encrypted message I have used two functions cipher1() & cipher2()
4. Now these encrypted messages will be sent to the user.

FOR DECRYPTION

1. The recipient will input the encrypted message (str1) and enter the same keyword(token) to generate the number "n" using function genkey ().
2. To decode the encrypted message I have used two functions cipher2() & cipher3()
3. Now the recipient can discover the original message.

ENCRYPTION (When sender passes the secret information)

ORIGINAL TEXT: SENT THE FORMULA ON 050623

S	E	N	T		T	H	E		F	O	R	M	U	L	A		O	N		0	5	0	6	2	3	

AFTER USING cipher1() [MV\ \PM NWZU]TI WV 8=8>:;

[	M	V	\		\	P	M		N	W	Z	U	]	T	I		W	V		8	=	8	>	:	;	

After using cipher2()

CIPHER TEXT: \VM[MP\ IT]UZWN VW ;:>8=8

\	V	M	[		M	P	\		I	T	]	U	Z	W	N		V	W		;	:	>	8	=	8	

DECRYPTION(When recipient decrypts the message)

CIPHER TEXT: \VM[MP\ IT]UZWN VW ;:>8=8

AFTER USING cipher2() [MV\ \PM NWZU]TI WV 8=8>:;

[	M	V	\		\	P	M		N	W	Z	U	]	T	I		W	V		8	=	8	>	:	;	

After using cipher3()

ORIGINAL TEXT: SENT THE FORMULA ON 050623

S	E	N	T		T	H	E		F	O	R	M	U	L	A		O	N		0	5	0	6	2	3	

THE CODE IN C:

```
void genkey()

{
printf("Enter a keyword:");
scanf("%s",token1);
 n=0;
for(int i=0;i<strlen(token1);i++)
 { n+=toupper(token1[i])-'A';
 n=n%10;                }
 }
```

```
void cipher1()

{
genkey();
for(int i=0;i!=l;i++)
{  if(str[i]!=' ')
str[i]=str[i]+n;
}
}
```

```
void cipher2()
{
int j=0;
for(int i=0;i<l;i++)
{ if (str[i]!=' ' || str[i]=='\0')
{temp[j]=str[i];
 j++;
}
else
{ temp[j]='\0';
int l1=strlen(temp);
for(k=0;k<l1;k++)
{ str[i-1-k]=temp[k];
}
 j=0;
}
}
printf("\n%s",str);
}
```

```
void cipher3()
{ genkey();
for(int i=0;i!=l;i++)
{ if(str[i]!=' ')
str[i]=str[i]-n;
}
printf("\nOriginal text:%s",str);
}
```

Note: char str[100], temp[100],token[100] , int n has been declared globally and original text & keyword(from senders end) & encrypted text & keyword (from recipient's end), has been taken input from main function. They could have been read from within the above mention four functions too.

REFERENCES:

https://en.wikipedia.org/wiki/Transposition_cipher/
https://github.com/Skills-Hub/Data-Structure-Hacks
https://www.cnblogs.com/hannahShaw/p/17867632.html
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LINUX GRAPHICS DRIVERS & HOW WINDOWS GAMES WORK ON LINUX

Soumya Modak,
Computer Science and Engineering, 2nd Year

What is a driver?

There are many hardware components from a variety of vendors, and each one behaves differently. So the kernel can't know how to talk to all of them. So it takes the help of a "driver", specific to that piece of hardware. If the kernel is the middleman between hardware and software, a driver can be imagined as being the middleman between the hardware and kernel.

What is an API?

Application Programming Interface(API) is the interface that a particular software or hardware can use to control(or request the service of) some other software or hardware without needing to know about it's internal mechanisms and how it works. It's a form of abstraction for the developer. As a real life analogy, think of cooking. At home, you can make something with available ingredients and utensils. This is a program doing something on its own with its own resources. But say, you don't have the necessary ingredients and equipment to make something. So you decide to go to a restaurant. But unlike at home, you can't go to their kitchen and start using their stuff to make your food. You have to go to the counter and place your order - there will be a menu listing all the items you can order along with other parameters like serving size, toppings etc. This is an API. It offers a limited menu of commands and parameters that it accepts. It is limited because it doesn't need to expose how it works and other details(like the restaurant may not provide their secret recipe because it is a trade secret).

Instead of needing to know about all the different graphics cards and to code their game for it(which would have been highly inefficient and impractical), they use a graphics API. Instead of talking directly to the GPU, the game talks to this API in the userspace and the API then talks to the actual device driver in the kernel. The Khronos Group specifies or standardizes how graphics API's like OpenGL and Vulkan should be made. These specifications have to be implemented individually for the various GPU's to account for their different capabilities and nuances. The Mesa Project provides this implementation.

How graphics drivers work in Linux

• A graphics driver has 2 components -

• The code which resides at kernel level and which drives the GPU itself, or the actual kernel device driver, and

• The code which runs at userspace level and translates the various API calls like opengGL, Vulkan etc and directs them appropriately to the kernel level driver. This is the userspace part of the driver.

• OpenGL, Vulkan are graphics API specifications. `mesa` is an opensource _userspace_ driver package that contains libraries that implement these APIs.

AMD

• `amdgpu` is the kernel-side part of the driver. It is open source and all AMD userspace drivers run on top of it, regardless of which one you use.

• `amdgpu-pro` is the proprietary userspace driver package (OpenGL+ OpenCL +AMDVLK). AMDVLK(for vulkan) is open source and can be installed without the rest of amdgpu-pro. amdgpu-pro runs on top of amdgpu.

• `mesa` contains the open source userspace driver package (RadeonSI for OpenGL, and RADV for vulkan). mesa runs on top of amdgpu.

• Older AMD graphics cards used the "radeon" kernel driver, with r600 or RadeonSI OpenGL driver on top. "radeon" does not support the Vulkan drivers.

Intel

• `i915` is the kernel driver, `i965` (part of the mesa package, for OpenGL) is the userspace counterpart. i965 is now deprecated. It's either Intel "Iris" or "Crocus" for modern chipsets.

• Vulkan is supported with a driver called ANV (also part of mesa) for hardware that supports vulkan.

> Only the opensource kernel modules are built into the kernel for intel and amd (amdgpu and i915 respectively). To get a working display, you also need to have the propreitory firmware blobs provided by the `linux-firmware` package. Without the blobs, the GPU will fail to even initialize.
>
> All GPUs on Linux require a kernel driver, firmware files, and userspace drivers OUTSIDE the kernel to provide API support.

Nvidia

• Nvidia provides proprietary kernel module and firmware in package `nvidia` and userspace drivers in the `nvidia-utils` package. They recently opensourced only the kernel module but everything else is still absolutely propreitory.

> `NVK`(in Mesa) is a new opensource vulkan driver for Nvidia that is currently in development.

• Nouveau is the unofficial opensource reverse-engineered driver for Nvidia. It needs the nvidia proprietary firmware blobs and provides an opensource kernel module and userspace driver in mesa. It has poor performance compared to the propreitory driver.

Until recently, only OpenGL was supported but it can now use the experimental `NVK` driver for vulkan.

How Windows games work in Linux

`WINE` is a compatibility layer that translates Windows API calls into calls Linux can understand. This is the foundation to get Windows software (including games) running in the first place.

For games, just Wine is not enough, since most games are using DirectX, specifically Direct3D (its graphics API). To run these games on Linux, you need a performant implementation of that API.

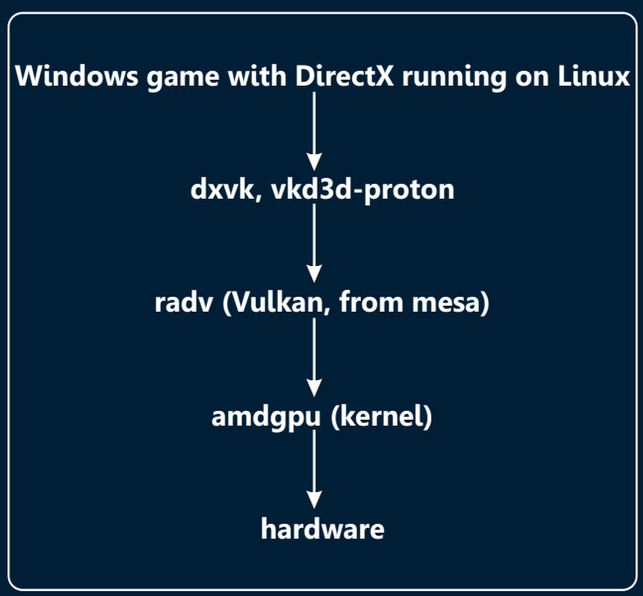
• `WINED3D` : This is Wine's own translation layer, included in Wine. It translates Direct3D and DirectDraw, which spans from DirectX 1 to 11, into OpenGL. For older games, this is fine but for newer games performance isn't that great. There is also the option to change the renderer to Vulkan so it gets translated into that.

• `DXVK` : This is a project with the goal to translate DirectX 9 to 11 into Vulkan. It is not connected to Wine and can be used in Windows and Linux, though it's not officially supported on Windows. It's mainly used in combination with Wine because, especially in modern games, the performance is much better than WINED3D.

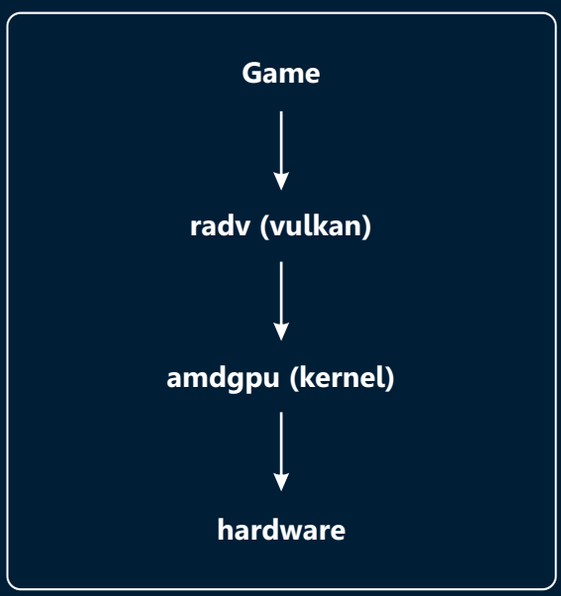
• `VKD3D` : This is, like WINED3D, a translation layer included in Wine. The goal is to be able to translate DirectX 12 into Vulkan.

• `Proton` : is basically Valve's collection of their fork of Wine, DXVK, VKD3D, and more, integrated in Steam.

Rough hierarchy of how a Windows game would work :



Native Linux game will work like this :



References:

- **mesa3d.org**
- **nouveau.freedesktop.org**
- **r/linux4noobs, r/linux subreddit**

A GUIDE TO OVERCOMING CERVICAL CANCER: A JOURNEY OF HOPE, COURAGE, AND RESILIENCE

Rahul Chatterjee
Electronics and Communications Engineering, 1st Year

Introduction:-

The terrible disease known as cervical cancer has impacted countless numbers of women all over the world. The battle against cervical cancer on a personal level is frequently waged on a separate front, even while researchers and medical experts are working nonstop to find new therapies and preventive measures. Women who have been diagnosed with this condition and must overcome the numerous obstacles that come with it fight it in their hearts and minds. This piece explores the personal dimension of the fight against cervical cancer by telling the tales of women who, in the midst of hardship, have exhibited courage, optimism, and perseverance. We learn more about the effects this illness has on people and families by their experiences, and we also realize how critical it is to keep funding research and providing support for those affected.

The Diagnosis: A Startling and Uncertain Moment:-

When one receives a cervical cancer diagnosis, it can be a painful experience that makes time seems to stop. One may experience panic, denial, and confusion, among other mixed emotions. It is the beginning of an uncertain and difficult path in which one must face treatment unknowns and make important decisions.

The good news is that cervical cancer is highly treatable, especially when caught early. Regular Pap smears and HPV tests are essential for early detection. These screening tests can detect abnormal cells before they develop into cancer. Moreover, the HPV vaccine can significantly reduce the risk of developing cervical cancer by protecting against the strains of HPV that cause most cases of cervical cancer. It is important to know that early detection and prevention can save lives.

Treatment for cervical cancer:-

Cervical cancer is a type of cancer that develops in the cervix, which is the lower part of the uterus that connects to the vagina. If diagnosed early, cervical cancer can be treated effectively. There are several treatment options available for cervical cancer, including surgery, radiation therapy, chemotherapy, targeted therapy, immunotherapy, and clinical trials.

Surgery involves the removal of cancerous tissue, as well as some healthy tissue surrounding the tumor. This is typically effective in the early stages of cervical cancer. Radiation therapy uses high-energy radiation to kill cancer cells. Chemotherapy, on the other hand, uses drugs to kill cancer cells. These treatments are often used in advanced-stage cervical cancer to shrink tumors and prevent them from spreading.

Targeted therapy drugs work by targeting specific abnormalities in cancer cells, disrupting their growth and preventing them from spreading. Immunotherapy drugs help the immune system recognize and attack cancer cells. Clinical trials offer access to new treatments or treatment combinations being studied for safety and effectiveness, giving patients the opportunity to try innovative treatments that may not yet be widely available.

Taking Life after Cancer: A New Normal:-

Many cancer survivors think that overcoming cancer is a fresh start rather than the end of the road. Following a successful cancer battle, individuals frequently concentrate on developing new habits and approach each day with a renewed feeling of resolve and thankfulness. The future appears more promising than ever thanks to developments in early detection, treatment alternatives, and preventative measures like HPV immunization. As gynaecological cancer specialist Dr. Patel notes, despite our considerable accomplishments, much work remains in the fight against cervical cancer. We can keep moving closer to eliminating cervical cancer by cooperating and banding together.

Empowering Through Education:-

Cervical cancer is a severe illness that impacts numerous women across the globe. Nevertheless, hope exists in the form of knowledge. Women can control their health and guard themselves against this disease by comprehending the significance of regular screenings and becoming acquainted with treatment choices. Healthcare providers and organizations are tirelessly working to spread awareness about the significance of early detection and prevention. They are committed to providing all women with the resources they require to stay informed and healthy. With their assistance, women can feel empowered and confident in their ability to fight cervical cancer.

Conclusion:-

Cervical cancer is not just a disease, but a path of strength, courage, and hope. By sharing personal stories, providing mutual support, and raising awareness, we can inspire women with cervical cancer to confront their challenges with bravery and grace. Through our collective efforts, we can eliminate the negative social attitudes surrounding this illness and provide hope to those in need.

DEEP-FAKE AI: INSIGHTS AND CONCERN

Rahul Chatterjee
Electronics and Communications Engineering , 1st Year

In today's digital era, deep-fake technology has become a serious concern as it can create fake content that appears to be authentic. This technology, powered by deep learning algorithms, has changed the way we perceive reality and can even manipulate our food choices. However, the implications of deep-fake technology go beyond just entertainment, as it poses a serious threat to journalistic integrity and can lead to widespread misinformation.

Deep-fakes are a type of synthetic media that can be produced using advanced AI algorithms, particularly those based on deep learning models. These models, such as Czech Large, can handle huge amounts of visual and audio data to create highly authentic digital representations of people and objects. With this technology, creators can modify existing media to make it seem as though individuals are doing or saying things that never really occurred. This has become a growing concern in recent years as deep-fakes can be employed to spread false information, misrepresent individuals, and harm reputations.

Sophisticated algorithms are utilized to examine large amounts of data, including images, videos, and audio recordings. The data is analyzed to determine the accessibility of fire points that are located deep within a given area. This advanced data system has the ability to identify and generate a wide variety of poses, facial expressions, and speech patterns. This is truly remarkable as it demonstrates how artificial intelligence can imitate human behaviour.

The emergence of deep-fakes in recent times has ushered in a new era in the world of daily news. This technological advancement has had positive and negative implications. On one hand, it has enabled the creation of high-quality content, on the other hand, it has provided an avenue for malicious actors to propagate false information, defame individuals or organizations, and stir up controversy. The convincing nature of deep-fakes makes it easy for them to be mistaken for genuine public footage, which poses a significant threat to the credibility of news organizations and undermines public trust in the media. Therefore, it is crucial for individuals and organizations to remain alert and take necessary measures to combat the spread of deep-fakes in the media.

The impact of Deep-Fake technology goes beyond manipulating media content. It raises concerns about various social issues such as privacy, security, and democracy. Deep-Fake abuse can lead to serious threats like political crimes and revenge porn. Moreover, it raises ethical issues regarding the distribution of fake content, which raises questions about accountability, consent, and freedom of speech. As online systems become more sophisticated, it becomes increasingly difficult to distinguish between real and fake content. The mixture of real and manufactured images blurs the lines between reality and fiction, creating confusion and doubt among the audience. As a result, the reliability of legitimate sources is at risk, leading to misinformation and widespread miscalculations.

To address the risk of deep-fake, a multi-faceted approach is needed that includes technology innovation, regulatory management, integrity, and corporate governance. It's important to classify and regulate deep-fake and prevent malicious use. This requires media expertise and informed decision-making. Investing in R&D efforts to advance detection systems and media forensic skills is essential. We also need to encourage people to identify deep-fakes and make informed decisions.

The emergence of deep creativity is revolutionizing the way we perceive information and engage with media. While this presents a tremendous opportunity for innovation and originality, there is also a risk of widespread misuse and a decline in the quality of public information. Laws and regulations can sometimes hinder the preservation of information integrity, but through transparent and honest collection, we can ensure that standards are upheld. Only through unwavering dedication and effort can we overcome the challenges facing journalism and maintain the authenticity of our language.

BRAINIAC ANSWERS

CE DEPARTMENT

1.	(C)	6.	(A)
2.	(A)	7.	(A)
3.	(A)	8.	(E)
4.	(C)	9.	(B)
5.	(B)	10.	(D)

CSE DEPARTMENT

1.	(D)	6.	(A)
2.	(D)	7.	(D)
3.	(B)	8.	(B)
4.	(D)	9.	(D)
5.	(A)	10.	(A)

ECE DEPARTMENT

1.	(C)	6.	(A)
2.	(B)	7.	(D)
3.	(A)	8.	(A)
4.	(C)	9.	(C)
5.	(B)	10.	(A)

EE DEPARTMENT

1.	(C)	6.	(C)
2.	(C)	7.	(B)
3.	(A)	8.	(B)
4.	(B)	9.	(B)
5.	(B)	10.	(B)

ME DEPARTMENT

1.	(A)	6.	(B)
2.	(B)	7.	(D)
3.	(C)	8.	(B)
4.	(A)	9.	(C)
5.	(A)	10.	(A)

SUPER ACHIEVERS

ARIJIT ROY - CSE
17 JOBS

SUBHRANSHU MUHURI - CSE
8 JOBS

SHREYA CHAKRABORTY - EE
6 JOBS

ANUSREE DEY
(CSE)
5 JOBS

DEBARGHYA MUKHERJEE
(CSE)
4 JOBS

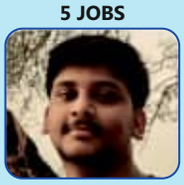
ELISHA GHOSH
(CSE)
5 JOBS

JASMEET KAUR
(CSE)
5 JOBS

RAHUL RANJAN
(CSE)
5 JOBS

ROHIT ROY
(CSE)
6 JOBS

SAGARIKA MANDAL
(CSE)
4 JOBS



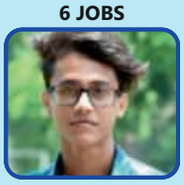
SAIKAT MUKHOPADHYAY
(CSE)
4 JOBS

SHASWATA DAS
(CSE)
4 JOBS

ANIKET CHAKRABORTY
(CSE)
4 JOBS

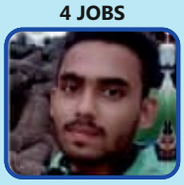
SOURAV DAS
(CSE)
4 JOBS

SUBHAYU SENGUPTA
(CSE)
6 JOBS



ARKA DUTTA - ECE
(ECE)
4 JOBS

TIRTHANKAR BAISHYA
(CSE)
4 JOBS



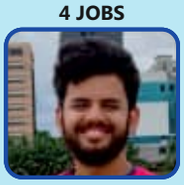
VIVEK KR. GUPTA
(CSE)
4 JOBS

ARITRY SAMADDAR
(ESE)
4 JOBS

ARKOJYOTI PAL
(ECE)
4 JOBS

BRIJESH JHA
(ECE)
7 JOBS

DEVLINA BISWAS
(ECE)
4 JOBS



RUBIAZ SIDDIQUEE
(ECE)
5 JOBS

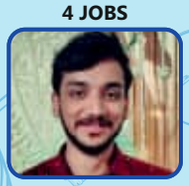
AISHIK SIKDAR
(CSE)
4 JOBS

SNAHASIS BARAT
(ECE)
4 JOBS

TAPAS KR. SAHA
(ECE)
4 JOBS

SHIBANI RAUT
(CSE)
5 JOBS

SIMRAN KUMARI
(CSE)
4 JOBS



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(CSE)
4 JOBS

ARITRI DAS
(CSE)
4 JOBS

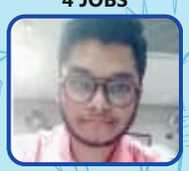
SHILPI SAHA
(CSE)
4 JOBS

SUKANTA KARMAKAR
(ECE)
7 JOBS

ANKITA DUTTA
(CSE)
4 JOBS

ARANYAK DAS
(ECE)
4 JOBS

SAYAN MAJHI
(ECE)
3 JOBS



SUBHRADEEP PAL
(EE)
3 JOBS

SUVRO SNIGDHO DUTTA
(EE)
3 JOBS

DIP BISWAS
(ME)
2 JOBS

CHIRANJEEB KUNDU
(CE)
3 JOBS

DEBABRATA SINHAROY
(CE)
2 JOBS

RISHIRAJ BAGCHI
(CE)
2 JOBS

RITTICK GHOSH
(CE)
2 JOBS

BIUSHWAJIT KUNDU
(CE)
2 JOBS

AYUSHMAN MANNA
(ECE)
4 JOBS

RYME MAJUMDER
(CSE)
8 JOBS

ABHISHEK MANNA-ECE
4 JOBS

SOURAV JANA
PINNACLE

SUBHANKAR PAL
PINNACLE

AYAN ACHARYYA-ECE
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AZAD SINGH-CSE
3 JOBS

ANIRBAN BALA
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SOUMEN DAS
PINNACLE

EKTAA SHAW-CSE
4 JOBS

SOUMYAJIT DAS
PINNACLE

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TCS

DEBOJYOTI PAL
TCS

TRISHA ROY
TCS

SK ESHAUDDIN
TCS

SUBHODEEP DAS
TCS

MOHAR MAITRA
TCS

SAUGATA SARKAR
TCS

EKTAA SHAW
TCS

GAURAV MISHRA
PINNACLE

BARNALI MAJUMDER
TCS

ARNAB KOLEY
PINNACLE

AZAD SINGH
TCS

ABHISHEK MANNA
TCS

SHRUTI SHARMA
PINNACLE

RIYA ROY
PINNACLE

SAYANI MITRA
PINNACLE

SAYAN SEN
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SHREOSI BASU RAY
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SAIKAT GHOSH
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SUJIT MITRA
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SUKHEN DUTTA
PINNACLE

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STATE / NATIONAL / INTERNATIONAL LEVEL EXAMINATIONS

Year	Registration Number / Roll Number for the exam	Student Name	Qualifying Exam
2022-23	2203007716	**PRAWESH KUMAR JHA**	**Staff Selection Commission**
2022-23	82100361	**AYAN MONDAL**	PGET
2022-23	EC24S74021115	**SOUVIK HALDER**	GATE
2022-23	EC23S43032173	**RAKHEE SHARMA**	GATE
2022-23	CS23S14026284	**SANI DAS**	GATE
2022-23	CS23S14026283	**ASISH SAMANTA**	GATE
2022-23	CE23S76503056	**SANDIPAN PRAMANIK**	GATE
2022-23	IN23S56513222	**NILIMESH GHOSH**	GATE
2022-23	22134671	**BIPLABJYOTI MANDOL**	CAT
2021-22	521771	**MEHULI DAS**	IELTS
2021-22	82100512	**OINDRILA BHATTACHARYA**	PGET
2021-22	2024701350	**DEBABRATA BISWAS**	VIT M.Tech Entrance Exam
2021-22	EC22S36502081	**SOURAV KUNDU**	GATE
2021-22	CE22S56507286	**SRIJAN KUNDU**	GATE
2021-22	CE22S56509330	**SUBHADEEP SARKAR**	GATE
2021-22	22036947	**SOURADEEP GANGULY**	CAT
2021-22	CE22S56507286	**SOUNAK ROY**	CAT

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Technical Assistants

Administrative Staff

Library Staff

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Computer Science and Engineering (Sec-B)

1st Year

Civil Engineering, Mechanical Engineering and Electrical Engineering

Electronics and Communications Engineering

2nd Year

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Computer Science and Engineering (Sec-B)

Electronics and Communications Engineering

2nd Year

Civil Engineering

Electrical Engineering

Mechanical Engineering

3rd Year

Computer Science and Engineering (Sec-X)

Computer Science and Engineering (Sec-Y)

Electronics and Communications Engineering

3rd Year

Civil Engineering

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Mechanical Engineering

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Computer Science and Engineering (Sec-Y)

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