
ETHNIC
OUR CHOICE, OUR VOICE
HOOGHLY ENGINEERING & TECHNOLOGY COLLEGE
HETC
DEVELOPING HUMAN RESOURCES
ESTD. 2004
HOOGHLY ENGINEERING & TECHNOLOGY COLLEGE

ETHNIC

XIIth Issue

HOOGHLY ENGINEERING & TECHNOLOGY COLLEGE
HETC
DEVELOPING HUMAN RESOURCES
ESTD. 2004

Hooghly Engineering & Technology College

Vivekananda Road / Pipulpati / Hooghly / West Bengal

UNRAVELLING ETHNIC

Ethnic / Twelfth Issue / 2022

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The Magazine Committee
Hooghly Engineering and Technology College

Contents

ETHNIC SPEAKS

We are happy to announce that the 12th issue of *ETHNIC* is finally ready for the readers. Every year, a team of editors, artists, authors, photographers and designers deliberate over each page of the magazine to ensure that the final issue is reflective of the collective vision of the students of HETC in all its varied ways - be it the critical engagement with contemporary issues or the creative flights of budding poets and storytellers. The Magazine Committee attempts to provide a platform for students to refine their writing and editorial skills and, most importantly, to express their aspirations and dreams and the challenges they meet while struggling through the mazes of everyday existence.

The COVID-19 pandemic has significantly impacted our way of living. DIGITAL is the NEW NORMAL now! Following this observation, the editorial team has decided to publish the current issue of ETHNIC digitally on our college website. The issue includes the reports of most of the events organised, virtually and in offline mode, between April 2020 and March 2022. We hope you will carefully read this magazine and share your valuable feedback with us. If you have any opinion or advice, feel free to mail us at this address – *ethnic@hetc.ac.in*.

ACKNOWLEDGEMENT

The 12th issue of the college magazine, Ethnic, is an accomplishment which has been possible because of the unswerving support and cooperation of all members of HETC. The magazine committee is extremely grateful to all of them, including our respected Advisors and all the respected HODs, DICs and Coordinators, for their guidance and constant motivation.

A special thanks to Mr. Pritam Biswas, Technical Assistant, BSH Department, for designing and arranging the magazine in its digital format.

VISION & MISSION

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-gradation of teaching resources, tools and technologies.

FROM PRESIDENT'S DESK

Education is an integral a part of development and engineering profession is extremely important for its sustainability and transformation. Covid-19 pandemic has affected various sector of educational development across the world including engineering training and practice.

Engineering education and practice is major driver of transformation, development, national growth and technological advancement across the globe. Reflections and rethinking were done on current educational research and teaching for engineers.

The COVID-19 pandemic has greatly affected the tutorial sector. There is a robust possibility of deteriorating psychological state due to the resulting sense of uncertainty and anxiety among students and school members (COVID-19 has caused education disruptions and prolonged school closures all round the world, which affected 90% of the world's student population and led most countries to believe other ways of providing education to make sure that learning never stops. Keeping education continuity in mind, most countries rushed to online distance education using online platforms E-learning, and ICTs, which depart hit or miss and rapid shift within the education sector, opened the door to several opportunities, highlighted existing and new disparities and gave rise to many challenges. The most important part within the way forward for education is that the way forward for our young ones. We cannot measure the skills and therefore the learning of today's student's using neither traditional means nor can we measure the standard of education supported the amount of scholars who pass or fail academically and on academic attainment. We would like to live students' creativity, innovation and important thinking also as their ability to adapt to vary and to regardless of the future awaits for them.

This period of disruption in education has given us a chance to bring more autonomy and self-learning, better assessments and outcomes, and more technology to the classroom. "Children in low- and middle-income countries could lose quite a full year's worth of learning even from athree-month school. This is often because children have fallen behind the extent of instruction while out of faculty and continues falling further behind because the curriculum progresses once they return. 1. Possibilities for developing the tutorial system. 2. Improving learning outcomes 3.Measuring the standard of education system outputs. 4. Partnerships between countries and organizations within the education sector to realize sustainable development goal 5. To seize aforementioned opportunities, recommendations were involved to enable infrastructure.

Especially in Engineering, Sciences, showing real-world examples or performing simple yet powerful in-situ experiments are very common during in-class teaching. This aspect is arguably one of the biggest advantages of in-class teaching. However, digital teaching technology can also help transfer these demonstrations to the digital world.

An important thing to understand when using novel, digital technology to enhance the learning experience is that at the core of each course, there is still the actual content of the topic should be aspired by all parties involved, the students, educators and universities. The Education & Training in our college also suffered. But the Endeavour made by our Faculty & Staff member made the student employable. The success rate of our student is very high.

Success of our student will again be challenged in the changed circumstance. Hope the success of the student will be high.

Wish the success of this E-Magazine.

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

FROM PRINCIPAL'S DESK

The publication of ETHNIC, the annual magazine of Hooghly Engineering and Technology College (HETC), is a much anticipated event for all the stakeholders of the college. In the past the printed hardcopy had unfailingly attracted the students, teachers and other staff members of the college. But the rampaging COVID19 pandemic forced us to make a change in that tradition and the last issue was published in digital mode.

It seems now that the grasp of the pandemic has weakened a little. The offline classes and other regular activities of the college have resumed and we are inching towards normalcy in a slow pace. But the situation was not clear even a couple of months ago and due to the uncertainty we decided to publish ETHNIC in digital mode for this issue also. I am confident that the digital copy of Ethnic will attract equal interest and enthusiasm like it did last year.

Ethnic has always been the foremost platform for the students of HETC as also the teaching and non-teaching staff members to give expression to their thoughts, their emotions and their opinions. In an educational institute effort must be made for the holistic development of the students and it has also been stressed upon by our approving and affiliating bodies repeatedly. We need to infuse our wards with multi-directional skills and diversified involvements to prepare them well for the present competitive world. Ethnic, as one of the several existing opportunities in the college, provides the scope to fulfil these requirements.

Ethnic has also been a much-wanted opportunity to the students of different courses of HETCS Skill Development Centre, who are equally welcome to contribute. This generates an added impulse to the publication along with creating awareness and inclination to those students who spend a comparatively short period in the premise with the engineering students.

I take pride in the fact that we encourage and assist our students to come forward for different kinds of co-curricular and extra-curricular activities in the college besides academics. This results in a rich literary and cultural heritage of the college as evidenced in the issues of ETHNIC. The members of the publication team, responsible for preparing and publishing Ethnic, deserve special appreciation for their dedication and focused efforts throughout the year, more so during these trying pandemic times, that really bring Ethnic to all the stake-holders in such a pretty form.

I wish the 2022 digital edition of Ethnic a grand success and also pray for the good health and safety of all the students, staff members and other stake-holders of this college in the still existing pandemic situation.

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

FROM HOD'S DESK

Hooghly Engineering & Technology College (HETC) is a self-financed college, established in 2004 sponsored by Hooghly Engineering & Technology College Society (HETCS), a non-profit organization. To march towards digital India, the country needs a huge number of youth power having wide knowledge of versatile modern technology. To fulfil the demand of competent technologists, Hooghly Engineering and Technology College has been developing human resources for the society since inception.

Nurturing creativity and inspiring innovation are two of the key elements of a successful education, and a college magazine is the perfect amalgamation of both. It harnesses the creative energies of the academic community, and distils the essence of their inspired imagination in the most brilliant way possible. Hooghly Engineering & Technology College has always been striving to keep itself ahead of the competition and the results are now for everyone to see. The essential purpose of a college magazine is to inform, engage, inspire and entertain a diverse readership - including alumni, parents, students, faculty, staff and other friends of the college - by telling powerful 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 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 the society. Hence, I am delighted to know that the magazine committee of our college is bringing out the 12th issue of Ethnic, a magazine consisting of different sorts of articles both technical and non-technical from the students, faculty members, technical staff members and non-teaching staff members of this institute. I take this opportunity to congratulate the Magazine Committee for bringing out this magazine in this COVID-19 Pandemic situation, 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 heartfelt thanks to all the members of the magazine committee for their relentless effort to make this issue a grand success in all respects

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

FROM HOD'S DESK

The Department of Civil Engineering started its journey from the inception of the college nearly two decades back. Ever since, the department has been successfully creating new knowledge, acquiring new capabilities, and at the same time producing an intelligent human resource pool contributing to various domains of society. The Department has always been on a high growth path, mostly relying on experienced and dedicated faculty members working with zeal and enthusiasm with a strong commitment to engineering education. Consequently, the department always provides Civil Engineering aspirants with a vibrant and optimum learning environment.

The development of expertise in the department is commendable. In keeping with the department's vision, the holistic growth of the students is focused upon that instills a habit of continued learning with a sense of responsibility to contribute to the betterment of society. The periodically updated curriculum of the university imparts technical knowledge to the students. The application-based environment in the state-of-the-art laboratories complements the same.

The students are motivated in writing technical articles and publish them in the departmental technical magazine after a thorough review by the editorial board. Besides, the students are encouraged to participate in internships, workshops, and seminars that are essential for developing practical knowledge. Cultural activities are also promoted through various clubs at the departmental and college level.

A strong positive reputation of the department pulls multiple core companies such as ITD CEM, JMC, Pinnacle Infotech Solutions, and many more for campus recruitment. A large percentage of students also qualify for GATE for pursuing higher studies.

For any further queries after vising the college website, which provides details of faculty members, research activities, research facilities, and various student activities, please feel free to drop emails at the address provided on the faculty pages.

Dr. Rajdip Paul
HOD
Department of Civil Engineering

FROM DIC'S DESK

Welcome to the department of Electronics and Communication Engineering at Hooghly Engineering and Technology College Campus, Vivekananda road, Pipulpati, Hooghly, West Bengal. The Department was established in the year 2004 with the aims of providing leadership in the field of Electronics & Communications Engineering with an intake of 60 students. We strive to train and empower our students who will make the world a better place by using power of engineering principles, techniques and systems.

Electronics and communications engineering is a dynamic and exciting area that provides excellent career opportunities in various areas of technology. The department faculties are committed to teach our students the fundamental concepts and the latest trends via smart teaching and learning process. The students are also taught with critical thinking and problem-solving skills as they accommodate their future with confidence. In addition to classroom teaching, the students are guided and motivated to practically implement the principles learnt in classrooms through experimentations in the laboratories.

Department provide healthy environment to students and faculties to carry out inter department collaborative research in area like VLSI Design, internet of things (IoT), robotics, etc. Students are also given opportunities to involve in IE Student chapter activities. The department conducts various workshops, expert talks and additional training programs on recent trends in Electronics and Communication Engineering in collaboration with industries for the benefit of faculty and students. The student projects are conducted in-house with the guidance of department faculty and industrial trainers.

Having undergone such a robust academic Programme under the supervision of highest quality faculty members, I am sure that all passing out students of the department are capable of visualizing, planning and developing big projects of commercial and research interests in their respective field of expertise. The graduates of the Electronics and Communications engineering have been selected by some of the leading software and hardware companies of the country.

Mr. Swarup Samanta
DIC
Department of Electronics and Communication Engineering

FROM DIC'S DESK

I am extremely pleased to learn that Hooghly Engineering & Technology College is bringing out its annual magazine "ETHNIC". This college magazine is a window to unfold the hidden talents and activities of the students.

The magazine, I feel, will mirror the creative and innovative ideas of both the staff members and the students.It is also a forum which could aptly be used for recording cultural events, expressing views, fond memories and creative writing. College magazine highlights the quality of education and extra-curricular activities that a college undertakes to develop all-round personality of the students. I am sure that the students of HETC will be benefitted to a large extend by the contents of the magazine.

I congratulate the members of the editorial team for their zeal, enthusiasm and untiring efforts in bringing out this issue in a very innovative manner. I send my warm congratulations to all those who have generously contributed to this annual magazine. Best Wishes!

Mr. Dibyendu Samanta
DIC
Department of Computer Science and Engineering

FROM HOD'S DESK

The college magazine is an essential and vital organ of the college giving a platform to the students to express themselves – their hopes, aspirations, ideas and opinions - as also to showcase their talents. It is, indeed, heartening that the 2022 edition of our college magazine 'ETHNIC' is going to be published.

Mechanical Engineering is one of the oldest and broadest traditional engineering disciplines. It is the mainstay of the manufacturing and power sectors and is concerned with the design, production, and operation of machinery. The Mechanical Engineering Department of HETC was established in 2010 with a goal to be recognized as a centre of excellence in the field of Mechanical Engineering. The department has grown over the years since its inception and now boosts of well equipped and well maintained labs with modern facilities, a young band of dedicated faculty members and a group of competent technical hands.

The credit for this timely and quality publication of 'ETHNIC' goes to the entire team of the Magazine Committee and I congratulate them for their commendable effort. I wish the current issue a grand success and hope that it will scale new heights in terms of quality of content.

Dr Smitadhi Ganguly
HOD
Department of Mechanical Engineering

FROM HOD'S DESK

I am immensely delighted and feel proud that Hooghly Engineering & Technology College is bringing out the 12th issue of the annual Magazine "ETHNIC". The College Magazine provides a platform to budding writers and artists express their feelings and in the process grooming them in the subtleties of emotions. I admire all authors, poets and amateur artists who have contributed this issue.

In this platform I want to make an appeal to our beloved students. Dear students, set your goals high. Dream, Aspire, commit and gain new heights, script new chapter of success. If you do so, the world would be yours. I am confident that you will continue to grab opportunities and bring laurels to yourselves and to the College.

I congratulate the advisors, conveners, designers, editorial board members and all other members of the Magazine Committee for bringing out this Magazine as per schedule, which in itself is an achievement considering the effort and time required.

I wish a bright future and success to all.

Dr. Rajesh Patra
HOD
Department of Basic Science and Humanities

FROM DEPUTY REGISTRAR'S DESK

We the HETC & HETCS-SDC family firmly believe that for a continuous growth, a professional voyage for knowledge, needs to continue forever. In the highly unstable world only the academicians to give right momentum for making life-long learners out of students.

We at Hooghly Engineering & Technology College & Hooghly Engineering & Technology College Society Skill Development Centre are committed to provide our students with outstanding education, practical training and facilities in the career they have chosen to pursue. To touch this pedestal we constantly update our students, so that good quality of professionals come up to fulfill the emerging needs of industries and social landscape. Not just for a decent career, we prepare a student for life. Endowing them with the best of facilities, we emphasize on imparting excellent education to our students in an encouraging environment; we pay equal attention to the overall development of our students. We provide opportunities for students to develop their personalities in terms of sports and cultural activities so that they become good human beings. We firmly believe in knowledge dissemination and knowledge creation through our highly qualified and experienced faculty members.

The HETC is known for its “State of Art” infrastructure, conducive and secure environment, various innovative schemes like “Interactive and Project Based Learning” and many more which are acclaimed all over region. In addition, we carved a niche that supports the transformation of the work culture to be competent professional through teamwork, innovation, receptiveness, and efficiency. HETC provides conducive atmosphere to the students for ethnic development of their personality.

The track record of achievements of our alumni is indeed commendable, where our students have proved their caliber in different spheres of industry, which demonstrates HETC’s culture and ethics. We are confident that in due course our students will also yearn towards joining the outstanding group of these successful personalities. We are duty bound to groom and enable students to live their dreams.

Even during worldwide interruption of all activities forced due to the Covid-19, we immediately shifted to online learning to serve as the educational platform, transforming challenges into opportunities. With incessant inspiration and active participation of all our Faculty & Staff Members we persistently endeavoring to attain academic excellence and create a concrete edifice for an excellent future of our youth.

Last but not the least, in this context, I must appreciate the efforts of hard work and untiring enthusiasm of all the team members of the Magazine Committee. Wish **Ethnic** a grand success.

Sreyasi Rupa De
Deputy Registrar, HETC
& Convener, HETCS Skill Development Centre

OBITUARY

Your presence we miss, your memories we treasure.

Prof. Rupchand Pal

1936-2022

Remembering Prof. Rupchand Pal

Prof. Rupchand Pal, the foremost founder member and chief Advisor of Hooghly Engineering & Technology College, left us forever on 16th August 2022 at the age of 89. He breathed his last at a private hospital in Kolkata after being admitted in the early hours of the same day. Prof. Pal, a seven-time MP from Hooghly parliamentary constituency in West Bengal, had been suffering from old age-related problems and other issues for the last few months. He was a meritorious student of Hooghly Mohsin College and was deeply involved in the college student movement. In his early life, he taught at Sreegopal Banerjee College as a Professor of English Literature. Later, he joined the Rishi Bankim Chandra College in Naihati.

A profound scholar, academician and eloquent speaker, Rupchand Pal was elected to the 7th Lok Sabha in 1980 for the first time. Later he was re-elected to the Lok Sabha in 1989, 1991, 1996, 1998, 1999 and 2004 from the same constituency. Besides HETC, he was pivotal in establishing and developing several academic and cultural institutions in the district of Hooghly. As a parliamentarian, he received applause for his outstanding speeches on different occasions inside and outside the Parliament. During his tenure as an MP, he served as a member of various standing committees. His in-depth and rational speeches in Parliament on various issues were well-received in the Lok Sabha. He has travelled to different countries of the world as a representative of the parliamentary team. He used to write on various topics in several newspapers and magazines.

A versatile persona Prof. Rupchand Pal was known to many distinguished people across all political disciplines. Throughout his lifetime, Prof. Pal came in close contact with many eminent personalities, including the Prime Minister, President and Chief Ministers of different states. Prof. Rupchand Pal had a very progressive mind and could enthusiastically adopt cutting-edge technologies at a breakneck pace. He has served the society for more than six decades with his vast knowledge of literature, history, science, and political science.

Prof. Pal's demise is irreparable to Hooghly Engineering & Technology College. The college has not only lost a visionary leader but a versatile mentor as well.

We pay our deepest condolences to his family and associates.

The Employees & Students
Hooghly Engineering & Technology College

Dr. Abir Bandyopadhyay

1965-2021

Manabendra Bakshi

1969-2022

BRAINIAC

EE Department

1. While comparing magnetic and electric circuits, the flux of magnetic circuit is compared with which parameter of electrical circuit?
(a) E.M.F. (b) current
(c) Current density (d) conductivity

2. Unit of flux density in a magnetic circuit is
(a) Weber (b) Weber/ Metre^2
(c) Tesla (d) Both B and C

3. What is the value of charge of a single electron?
(a) $1.602176634 \times 10^{-19}$ coulomb
(b) $1.602176634 \times 10^{19}$ coulomb
(c) $1.602176634 \times 10^{-10}$ coulomb
(d) 1.602176634 coulomb

4. Name the material among the given options which has negative temperature co efficient.
(a) Silver (b) Carbon
(c) Silicon (d) Both B and C

5. In SI unit,1 horse power is equal to
(a) 746 W (b) 735.49875 W
(c) 700 W (d) 33,000 foot-pounds of work / minute

6. Super position theorem is applicable for
(a) Non-Linear network only (b) Linear network only
(c) Bilateral network only (d) Both B AND C

7. A dc generator obeys-
(a) Fleming's left-hand rule
(b) Fleming's right-hand rule
(c) Faraday's law of electromagnetic induction
(d) Both A and C

8. One Joule is equal to
(a) 10^7 Erg (b) 10^5 dyne
(c) 1 kg.m/s2 (d) None of these

9. Permanent magnets are normally made of
(a) Cast Iron (b) Wrought iron
(c) Alnico Alloys (d) Aluminum

10. Permeability in a magnetic circuit corresponds to_____ in an electric circuit.
(a) Resistance. (b) Conductance.
(c) Resistivity (d) Conductivity

CE Department

1. Which one of the following is not a light-weight concrete?
(a) aerated concrete (b) no fine concrete
(c) polymer concrete (d) foam slag concrete

2. The heaviest metal is
(a) Steel (b) Lead (c) Tin (d) Cast Iron

3. lump required for concreting heavily reinforced sections without vibration is
(a) up to 25 mm (b) 25-50 mm
(c) 50-75 mm (d) 75-125 mm

4. The ratio of strength of concrete after 1 year to that at 28 days is
(a) 0.9 (b) 1 (c) 1.1 (d) 1.2

5. Development of fine hair cracks in plastered surface is known as
(a) Cracking (b) Crazing
(c) Blistering (d) Flaking

6. When large openings are to be made in existing wall, the type of temporary work used is
(a) raking shore (b) flying shore
(c) dead shore (d) underpinning

7. Which one of the following is not a type of trap used in plumbing
(a) Floor trap (b) gully trap
(c) street trap (d) intercepting trap

8. The headquarters of Survey of India is located at
(a) New Delhi (b) Mumbai
(c) Manali (d) Dehradun

9. A watch-like instrument carried in the shirt pocket to count the number of steps taken to measure a line approximately is called
(a) Passometer (b) Pedometer
(c) Odometer (d) Speedometer

10. In India mean sea level used for fixing reduced levels is at
(a) Goa (b) Mumbai
(c) Vishakapatnam (d) Karachi

BRAINIAC

CSE Department

1. What does CAPTCHA stand for?
(a) Completely Automated Program to Test Customers and Hackers Apart
(b) Completely Automated Public Turing test to tell Computers and Humans Apart
(c) Coded Automatic Profile To identify Computers and Humans Apart
(d) Coded Automatic Profile To set Computers and Humans Aside

2. The name "Google" is actually a wordplay on the mathematical term 'googol'. What does 'googol' mean?
(a) Information about the entire globe
(b) Information about the entire universe
(c) The number 1 followed by hundred zeros
(d) The number 1 followed by thousand zeroes

3. Doug Engelbart invented the first computer mouse in around 1964 which was made of?
(a) Paper
(b) Wood
(c) Plastic
(d) None of these

4. Which software do we use to view web pages?
(a) Internet
(b) HTTP
(c) URL
(d) Browser

5. Storage which retains data without electric power supply, is known as
(a) Direct storage
(b) Volatile storage
(c) Non-volatile storage
(d) Power storage

6. What happens when you boot up a PC?
(a) Portions of the operating system are copied from disk into memory
(b) Portions of the operating system are copied from memory onto disk
(c) Electric power delivery activates all the electronic components
(d) None of these

7. Application of machine learning methods over a very large dataset is known as?
(a) Big data computing
(b) Artificial intelligence
(c) Data mining
(d) IOT

8. Which among the following security principal is violated if access of a computer in the network or internet can be denied through cyber-attack?
(a) Availability
(b) Denial of service
(c) Access control
(d) Integrity

9. Which of the following usually observe each activity on the internet of the victim, gather all information in the background, and send it to someone else?
(a) Malware
(b) Trojan
(c) Spyware
(d) All of the above

10. What does the term "elasticity" in cloud computing refer to?
(a) Ability of growing
(b) Ability of distributed processing
(c) Ability of shrinking
(d) Both a and c

BRAINIAC

ECE Department

1. What was the first invention in the field of electronic device?
(a) JFET (b) BJT (c) MOSFET (d) Relay

2. Who was known as the father of "Radio Science"?
(a) Sir Jagadish Chandra Bose
(b) Guglielmo Marconi
(c) James Clerk Maxwell
(d) Alexander Graham Bell

3. Name the manufacturer who had first launched the 64-bit microprocessor?
(a) Intel Corporation
(b) Motorola
(c) Taiwan Semiconductor Manufacturing Company (TMSC)
(d) Advance Micro Devices (AMD)

4. Which processor had a connection with the comic book character "Superman"?
(a) IBM's Power PC 601 (b) Intel's Pentium 4
(c) AMD's K5 (d) Qualcomm's Snapdragon 888

5. What was the first Bluetooth device?
(a) Ericsson T39 (b) Onkyo W800BT
(c) JBL Flip 3 (d) Logitech Mouseman Cordless

6. Which is India's first remote sensing satellite?
(a) Aryabhata
(b) Bhaskara Sega-I
(c) The Indian National Satellite (INSAT) system
(d) Ariane Passenger Pay Load Experiment (APPLE)

7.Which devices use 5 nm chips?
(a) Qualcomm's Snapdragon 780G and Snapdragon 888
(b) Apple's A12 Bionic chip
(c) SOC used in Samsung's Galaxy S8
(d) Intel's Broadwell Core processor

8.What is Picture aspect ratio o1080p HD widescreen?
(a) 2:1 / 18:9 (b) 4:3 / 8:6 (c) 21:9 (d) 16:9

9. What is known as Qubit?
(a) is a platform for 3D Virtual meetings
(b) is an open-source software
(c) is quantum bit
(d) output of a quantum flip-flop

10. Who invented the first electronic Flip-flop?
(a) Robert Noyce (b) William Eccles and F.W Jordan
(c) Jack Kilbey (d) Gordon Moore

ME Department

1. In a linear arc welding process, the heat input per unit length is inversely proportional to
(a) Welding Voltage (b) Welding current
(c) Welding speed (d) duty cycle of the power source

2. The Degree of Reaction for impulse turbine is
(a) One (b) Two (c) Three (d) Zero

3. Number of working stroke per min for a four stroke cycle engine is _____the speed of the engine in rpm.
(a) Equal to (b) One-half (c) Twice (d) Four-times

4. The angle of lap for open belt drive is
(a) 180+2α (b) 180-2α (c) 2α -180 (d) none of these

5. The amount of water whose temperature could be raised through 1 K by the heat required to raise the temperature of the body through 1 K is called
(a) Calorific value (b) Specific heat
(c) Water equivalent (d) Equivalent Evaporation

6. The normal stress in a fluid will be constant in all direction at a point only if
(a) It is at rest (b) It has uniform viscosity
(c) It is friction less (d) Incompressible

7. The overall coefficient of heat transfer is used in case of
(a) Conduction (b) Convection
(c) Radiation (d) All the three combinations

8. If the compression ratio of an engine working on Otto cycle is increased from 5 to 7, the % increase in efficiency will be
(a) 2% (b) 8%
(c) 14% (d) 27%

9. If the radius of wire stretched by a load is doubled, then its Young's modulus will be
(a) Double (b) Half
(c) One-forth (d) Remain unaffected

10. The heating of wet steam at constant temperature is heating it at constant
(a) Volume (b) Pressure
(c) Entropy (d) Enthalpy


HOOGHLY ENGINEERING & TECHNOLOGY COLLEGE
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WE & THE WORLD

Flotin'

Arghya Chakraborty / 3rd Year / CSE Department

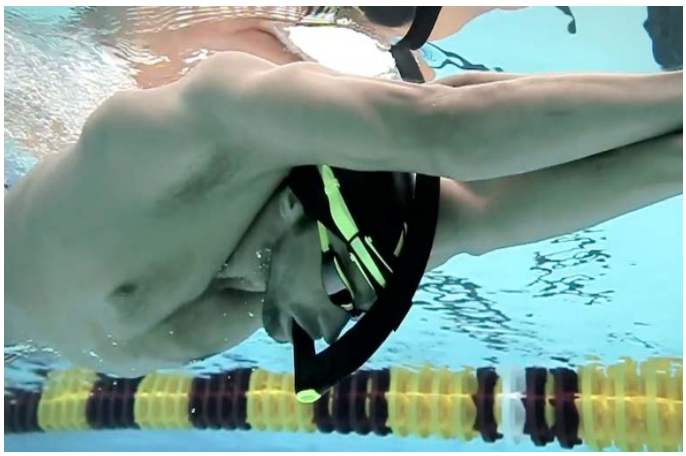
Swimming is a hobby that can last a lifetime—plus, it's a great way to get a whole-body workout, regardless of the season.

As a kid, as soon as school was out and temperatures started to rise, the first thing I wanted to do was jump in a body of water. It didn't matter if it was the lake or the neighbourhood pool—I just wanted to swim. But now, as an adult, there are even more reasons I enjoy it. Here's why I still love to swim:

"It eases stress."

I love being outside in the summer. To me, being in or near water helps to reduce feelings of stress—even just listening to the sound of water is soothing. Swimming is a great way to enjoy fresh air, sunshine, and water simultaneously. Those things combined are great at instantly improving my mood—likely thanks to the sunshine vitamin, or vitamin D, as we know it. Vitamin D is produced in your skin in response to sun exposure and helps regulate mood, ease anxiety, and ward off depression.

Swimming requires constant movement to stay afloat unless I'm in the shallow end of the pool. Because of that, swimming is an effective way to burn calories. Of course, it will vary depending on your pace and weight, but swimming for one hour can burn upwards of 493 calories, even at a slower pace. Plus, the constant resistance to muscles is considered a cardiovascular and strength training workout in one.



It's a life skill

You don't have to be a pro to reap the benefits of swimming. As long as you know the basics of swimming, most people can do it—even if injured. Start with one lap, then two, and soon you'll improve your technique and increase your duration and endurance in the water.
Once you know how to swim, it's a skill you can use for a lifetime. Continue putting the talent to good use by snorkelling, playing water polo, participating in water aerobics, swimming in a triathlon, or scuba diving. And once you're swim-savvy, you can pass the skill on to others—even if it's just teaching your kids at the community rec centre. If you don't participate in these other activities, you're still likely to have a hobby for life

It's a team or individual sport

Being a swimmer doesn't mean I have to be competitive or an athlete. I enjoy swimming because I don't have to race again someone else—I can hop in the pool and just race against time. I can time myself for any length I choose, and each time I'm in the pool, I can try to beat my record. The type of workout I want is always up to me.

It's a low-impact sport

Swimming is well known for being easy on the joints—it's especially great for someone with a sports injury or lower-back or knee issues. Swimming can be a great calorie-burning solution if you still want to work out while injured.
If I have shoulder aches or injuries, I can give them a rest by swimming with a kickboard—plus, a kickboard targets my legs and helps to keep them toned and conditioned.

It requires little equipment

I typically only need a swimsuit and goggles. But if I want to get a little fancier, I'll grab a swim cap, fins, or hand paddles. Paddles and fins can help build power and strength in the water, tone arm and leg muscles, and

help to refine leg and arm strokes.

And, thanks to heated indoor pools, I know I can work out regardless of the season or the weather.

We all know and love Michael Phelps. He's the most decorated Olympian in history, with 28 medals…23 of them gold. His career spanned 5 Games — 2 decades of dominance.

You're probably curious, what did Phelps do to become the most excellent swimmer the world has ever seen? Today we're diving into how Michael Phelps became a superstar athlete who made history.

Michael Phelps was born in Baltimore, Maryland, on June 30, 1985. He started swimming at age 7 for two reasons. The first? His older sisters, Hilary and Whitney, swam, and he wanted to try the sport. The second? Phelps had a ton of energy as a kid, and his mom felt swimming could help him keep it under control.

Discovering His Potential

Around this time, Phelps met his coach, Bob Bowman. Bowman recognised Phelps' potential as a North Baltimore Aquatic Club coach and started pushing him to train harder.

By 1999, Phelps had made the U.S. National B Team. He was just 14!

At 15, he turned pro, becoming the youngest male swimmer ever to do so. For the next 16 years, Bob Bowman and Michael Phelps travelled the world together, competing internationally, eventually becoming household names.

Training Style

It's no secret that Phelps trained hard. You have to if you want to be the greatest swimmer in the world! During the peak of his training, Phelps swam about 80,000 meters a week. That's almost 50 miles!

He would swim twice a day, sometimes more if training at a high altitude. Much of his training was focused on drills, underwater kicking, vertical kicking and sculling. Even the best need to work on the fundamentals every day!

A Strong Support System

We can't talk about Phelps' success without mentioning his incredible support system behind the scenes.
His mother, Debbie, is probably one of the most iconic swim moms. She was there through it all, from high school swim meets to record-breaking Olympic performances. She supported Phelps when he wanted to watch race footage during dinner and encouraged him to learn from his mistakes.

From finding a good coach to fueling your body properly to staying disciplined with your workouts, we can all take valuable lessons away from Michael Phelps' incredible career.

Some comments on social media

"To win a single gold medal at the Olympic level is incredibly difficult. To win 23 !!! It speaks for itself, but people often don't realise that every time Phelps swam, he had a target on his back. Every race was against the best in the world, and none of them was swimming as many events as he, including the 400 IM, the toughest swimming event. In Beijing, many of his rivals only swam one or two events while Phelps swam eight, with most events having prelims, semis, and finals. That's a lot of racing. And finally, he sustained his dominance for over 16 years. He is the greatest athlete, Olympic or otherwise, of all time."

BRAHMAVANDINI

Chaitali Roy / 4th Year / ME Department

In Hindu philosophy, Brahmavadini (women ascetics) are women who strive for the highest philosophical knowledge of Brahman, that is, those who seek greater universal consciousness. It is opposed to a Sadyovadhu; usually a sage's wife, dedicated to domesticity and the welfare of her family. The Sanskrit word Brahmavadini is the female equivalent of Brahmavadi. According to Monier-Williams's Sanskrit-English Dictionary, brahmavādín means 'discoursing on sacred texts, a defender or expounder of the Veda, one who asserts that all things are to be identified with Brahman'. It doesn't mean "one who speaks like God".

The prominent ones were vak Ambhrini, Lopamudra, Vishwawara, Sikta, and Maitreyi.

A hymn in the Rigveda is attributed to Lopamudra. Maitreyi, the wife of Yajnavalkya, is accredited with ten hymns of Rigveda.

Two suttas (hymns) of the tenth mandala (book) of Rigveda 39 and 40, each containing 14 verses, have been attributed to Gosha. The first hymn praises the Ashvnis and the second hymn is a personal desire.

Lopamudra was a Vedic philosopher and scholar. She was born during the era of Rigveda. She was the well-known Rishiki who visualized the "Hadi Pancha Dasi" mantra of the Srikul Shakta tradition of Hinduism.

Lopamudra is credited to have composed hymn number 179 in Rigveda. She was the wife of sage Agastya. She is also mentioned in Yajurveda Brihaddevtakara and agama granthas and hailed as "Mantradsika" in Rigveda.
There were many others too like Vagambhrini etc....

From time to time, women have also put their beautiful presence in Vedas; they have been a good power of women, Beauty with brains.

It is now our time to come out of a deep illusion that women were treated badly or otherwise in our ancient days. Yes, it was, but from the topic of Brahmavandini, we can conclude that our Vedic era was much more advanced. Due to the start of Kali-yuga, there have been diminishing views on women, thus labelling them, so let us arise from such statements and widen our perspective regarding it.

KILLING OR ACCIDENT

Pranay Sen Choudhury / 1st Year / ECE Department

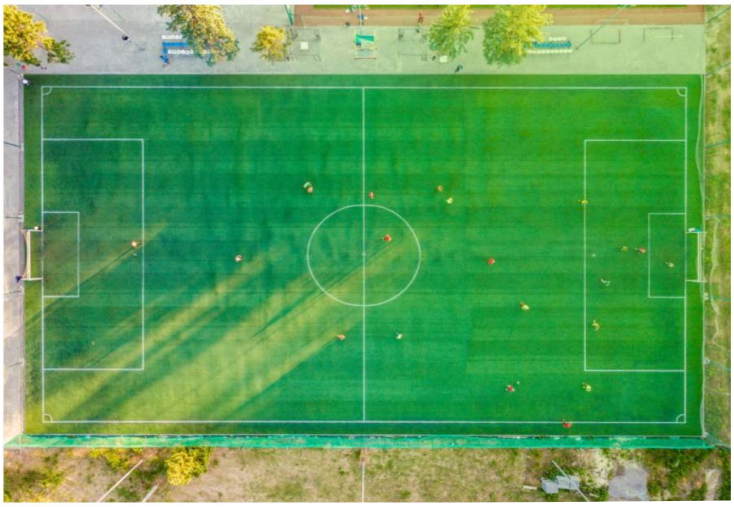
There were two friends named Rohit & Johnny. Rohit was very playful & straightforward-minded. On every occasion, both the friends met each other and once such incident occurred on 1st April. In the morning, Johnny came to Rohit's house. They both made a plan to enjoy the day. Johnny was quite brilliant. Johnny wanted his bicycle from Rohit. Rohit gave him this. He could not realize what was going to happen. Johnny took his bicycle and went for some time. He came after more than half an hour. He wanted to play a trick. Johnny personally had a Scotty, but that day when he came to Rohit's house, he did not bring his Scotty. The story of two friends may be very simple to the readers but it has a twist and is very painful. After returning, Johnny gave it to Rohit. Rohit started his ride on a jammed road and sometimes got imbalanced while riding the bicycle; he could not control the brakes. He was puzzled. He could not understand what had happened. He could not understand why the bicycle was not running properly.

Meanwhile, he came on the G.T road; there were so many speedy cars, bikes, cabs and other vehicles. He suddenly overturned from the bicycle, missing the control of the bicycle handle and a car smashed him. Somehow the news of his death reached Johnny. He then could realize why it happened. It was an attempt to make an 'April Fool' Rohit. Johnny made the cycle handle loose, so the cycle was not operating well, which is why the accident happened. So our question is, "Is it an accident or killing"? A fatherless talented, playful, young person left the earth so early. His mother was the only survivor. "Who is to be blamed for this death"?

WAR OF TACTICS

Indrasish Das / 3rd Year / CSE Department

As we know that people play around the world and love football. It is a universal game because every small and big nation plays it. From the spectator's point of view, this 90 minutes game is full of excitement and thrill. It keeps the player physically as well as mentally disciplined. It is a 90 minutes test of their sportsmanship, patience and tolerance. It is a game where people have to give their hundred per cent. There is no pretension. It is not just a game of tactics and strength. It is a game of emotions.



If we concentrate more on India, we will find that football was not a popular game except in west Bengal. But nowadays, it has become very much popular in India. The All India Football Federation governs the sport. The Bengalis are the forerunners in the football world in India. Apart from the traditional Santosh trophy, the AIFF is promoting two other leagues in India as Indian super league(ISL) and the I-league. Because of these two leagues gradually, football is getting an attraction in India. These two leagues have brought people from different states together in unity.

ISL, officially known as Hero Indian Super League, is a men's professional football league. It comprises 11 clubs. It is a seasonal tournament which generally runs from November to March, where each club plays against all the other clubs in a round-robin style. At this point, this is the most entertaining league in India, where all the clubs have their separate fan bases. Since its inception in 2014, the Indian Super League has put the country on the world football map. The most significant thing is that this league promotes more local stars. In the light of Indian recent performances in the world cup qualifiers, this is a welcome move. India expects to see plenty of young talents coming to the fore next season. ATK Mohun Bagan, East Bengal, Bengaluru, Chennaiyan, Goa, Hyderabad, Jamshedpur, Kerala Blasters, Mumbai City, Northeast United and Odisha are some of the teams.

Hero
INDIAN SUPER LEAGUE
IMG RELIANCE STAR

The discussion will remain incomplete about ISL if we do not focus on Asia's biggest derby, the Kolkata derby. It is considered the biggest derby in Asian football and one of the biggest derbies in the world. These two teams meet several times, twice in ISL and twice in Calcutta Football League(CFL). When India was under British control, the East Bengal football club faced Mohun Bagan AC in 1925. It is a rivalry that has persisted through the decades into the 21st century. They have long attracted enormous crowds, and their rivalry is celebrated in Bengali popular culture. Mohun Bagan club was formed in 1889, which drew the support of supposed 'natives of Kolkata. The newcomer "East Bengalis" often experienced discrimination from those who considered themselves indigenous to the city. This mistreatment extended to the football pitch. The rivalry between natives and newcomers took on a different intensity. Mohun Bagan (AC) and East Bengal club hated losing each other. Because of their arch-rivalry, football has always been popular in Bengal.

Moreover, ISL is very entertaining and provides high-quality football that engages hundreds of millions of fans. With a mission to revolutionize the sport, the hero ISL is positioned as a high-quality and dynamic league that will elevate Indian football to an international level. Before ISL was introduced, there were some outstanding players on the streets who had the potential to become world beaters, but the problem was that there was no proper system to identify them. Now, ISL is doing that job by placing the young talents. We know that dominant football countries in Europe like Germany, Spain, Italy etc., score over us because those countries have scouts whose job is to find and identify young talents who have the potential to become a star with the right coaching.

Not only in the grassroots but also the overall development of Indian football has been good, but the hard part is that reaching the top 10 in Asia is still far. But as the ISL is improving, we are sure India will reach the top one day. There are some objectives that ISL is maintaining to present an international quality domestic football competition, to engage hundreds of millions of passionate and proud Indian football fans, to encourage and facilitate the masses to start playing the sport, to produce a large pool of young talented players to become a hero and to play for the Indian national team. Proper governance and marketing are required to set new standards in sports administration.

HOW TO SLEEP WELL?

Aadil Mushtaq Wani / 4th Year / ME Department

Quality sleep doesn't just feel good; it's good for you too. It's just as vital as eating a balanced diet and drinking enough water. If you're looking for better sleep, the secret often lies in what you're doing before you even hit the sheets.

1. Why sleep does a body good

Start a sleep journal to track your sleep habits. You can use a notebook or opt for a sleep app or fitness tracker. Regardless of your chosen method, ensure to include when you go to bed and when you wake up. You can add anything else you›d like to track, like how long it takes you to fall asleep, how often you wake up during the night, and how you feel when you wake up. As you continue through the challenge, your journal can help you track what works best for you.

2. Get more light during the day

If you›re trying to wake up earlier, open your curtains and expose yourself to light when you first wake up and throughout the day. Avoiding blue lights at night can help speed up the rhythm to help you get to sleep earlier. Avoid sunlight in the morning with blackout curtains if you›re trying to sleep in. Getting more light at night, like an after-dinner walk, can help push your bedtime back.

3. Start a worries journal

Make a list of the tasks you need to do tomorrow and all the things you›re currently worried about. You can even put it with your sleep log or start a bullet journal, which you can use to organize all parts of your life. If it›s helpful, ask yourself, «How much will this worrying matter tomorrow?» Gaining perspective is one way to deflate anxiety.

4. Is counting sheep not cutting it?

If your brain is consumed with thoughts of work deadlines or other stresses, start with a breathing exercise. It can help clear your mind and slow your breathing and heart rate. If you›re still restless after 20 minutes, get out of bed and read a book (preferably one that isn›t on a screen). After 30 minutes of reading, go back to bed and try again.

5. Turn your bedroom into a dark cave

Be a sleep detective and look for any light in your room. Look for phone chargers with lights, night lights, and electronic devices. If it lights up, get rid of it. If the light still peeks through your bedroom windows, consider investing in blackout curtains or a sleep mask. If sounds are an issue, look into white noise machines or other noise blockers.

6. Mind your beverages

Have one less caffeinated or alcoholic beverage. Write down how this affects your sleep in your journal. Pay attention to how your body feels during the day. Getting better rest pays off, eliminating your need for midafternoon or early evening pick-me-up.

7. Change up your evenings

Mix up how you spend your free time in the evenings. Stop using screens an hour before you go to bed. Instead of scrolling through Instagram, try reading a book (not digital!), or embrace your inner child and draw or colour.

8. Add a workout to your day

Pick a 30-minute window in the daytime (here›s a chance to get some sun!). Exercises like lunges, pushups, and squats are great core exercises and easy to incorporate into your day. If you want to add some aerobic exercise into your routine, try jumping rope or burpees.

9. Stay out of your bed

Suppose you love to read in bed, set up another relaxing spot in your home. Maybe you choose your favourite chair and pair it with a comfy blanket, and this becomes your go-to spot for reading or meditating. If working in bed is your guilty pleasure, add some relaxing touches to your at-home workstation, like fresh flowers or an aromatherapy diffuser, to make it feel cosier.

10. Take a nap

Limit your afternoon naps to 10 minutes. It keeps your body in the first two sleep cycle stages; that way, you wake up feeling refreshed with no grogginess.

IF THESE CHANGES DO NOT HELP, DO VISIT YOUR NEAREST COUNSELOR.

MENTAL PEACE: AN ESSENTIAL STAGE

Shital Jaiswara / 3rd Year / CSE Department

Today's most emerging, untold and least discussed issue is mental illness. The World Health Organization (WHO) defines health as psychological and physical well-being, not merely physical well-being. There is a famous saying, "It is health that is real wealth, not a piece of gold and silver." But most people limit the term 'health' only to 'physical health. They think that good health means a state of absence of disease in the human body. They avoid the existence of mental health along with physical health. They are not ready to accept that mental health is as important as physical health.

There is another famous saying, "Healthy body leads to a healthy mind", but most of the time, it is found that a disease-free body also suffers from mental traumas such as depression, anxiety, hypertension, suicidal thoughts, and loneliness. These are some symptoms from where it all begins and sometimes get extreme. In the 21st century, almost half the generation across the globe is experiencing mental health problems. A survey from WHO conducted in 2020 claims that 7.9% population of our country suffers from mental health issues.

Mental health affects our everyday lives - family, social understanding and physical health. Research suggests that every fourth person has a mental illness but is afraid to consult a doctor because of societal taboos. When people perceive a hostile environment around them, they feel tortured mentally and do not get anyone to share their feelings or pain in life; such a condition leads a man to mental misbalance. Even the youths face mental issues due to academic pressure, family pressure, unemployment, etc. It is also difficult for teenagers to handle these pressures as they are not mature enough.

The big reason behind this is the misconception of our society about mental problems or being prejudiced. Mental health is the least discussed topic among all health problems in our surroundings. There has been no proper strategy to overcome this problem till now. Most of us only ever share the good things; we don't share how we actually feel. There is competition in every next step of life.

If there is a problem, there is a solution; it just needs time and patience to look at it. Like physical illness, mental illness can be treated and cured too. We must consult the doctor on time. Indeed, it is the patient's responsibility, but it's also the responsibility of the patient's close ones to help them. Almost 50% of youth commit suicide due to mental stress. In this era of social media, people have enough time to post photos and messages to the public but not to ask about the well-being of the person sitting beside them. Share your thoughts with your near and dear ones who are physically present with you and later with the virtual ones. You can also do yoga or meditation to recover. Always remember, "A healthy mind is the greatest treasure to find".

PRIDE...IT IS WHO I AM

Aditya Kumar Sharma / 3rd Year / CSE Department

"Please never say those words in front of my parents. Especially my father."

Being yourself is normal, but people make it hard to live; even the person you love the most won't accept you the way you are. Today, homosexuality and queer identities may be acceptable to more Indian youths than ever, but within the boundaries of families, homes and schools. Acceptance remains a constant struggle for people. I have heard of people coming out of the closet and declaring to their families that they are not the person their family expected them to be.

Lesbian, Gay, Bisexual and Transgender, over the past decade, these people have gained more and more tolerance and acceptance in India, especially in large cities.

Nonetheless, most LGBTQ people in India remain closeted, fearing discrimination from their families, who might see homosexuality as shameful. Discrimination is still present in rural areas. Being L, G, B or T is neither a problem nor a choice. LGBTQ individuals are merely individuals with sexual preferences that differ from what would appear to be the 'norm' due to different learned behaviours and having a perspective and mindset that differs from everyone else's. Saying that it's objectively wrong for people to have sexual preferences that differ from the norm is objectively wrong. People in the LGBTQ community are fighting for equal rights and acceptance. Trans people, especially, face a lot of difficulty in finding acceptance.

Do you know the difference between a person being Trans and being a person who is called "Kinnar" or "Hijra" even though Non-Binary also recognizes them? Well, the difference is enormous; some people don't neatly fit into the categories of "man" or "woman," or "male" or "female." For example, some people have a gender that blends elements of being a man or a woman or a gender that is different from either male or female. Some people don't identify with any gender. Some people's gender changes over time. People whose gender is not male or female use many different terms to describe themselves, with non-binary being one of the most common. Now Trans people are someone whose gender identity or expression does not match the sex they were assigned at birth. For example, a transgender person may identify as a woman despite having been born with male genitalia.

People from this community are looked down upon all the time. It is a significant issue because discrimination against the LGBTQ community is highly prevalent.

If ordinary men and women have the right to live in this society with respect, then why not a person who belongs to LGBTQ can live in this society with respect? It's not about what our religion says. It's about what humanity says...If we talk about faith as per the Hindu aspects, Lord Rama had given a boon to hijras for their loyalty. That's why the curse or boon of hijras means a lot. Now often, I can see the way they are. In the present scenario, we have India's first Transgender judge "Joyita Mondal" whose work ignites hope for transgender people worldwide. Today Indian cinema is slowly embracing homosexuality on the big screen. Staring with Ayushman Khurrana, who undertook the role of a gay man in Bollywood's first gay romcom Shubh Mangal Saavdhan to make an "important film in the commercial mainstream space". He believed that films would normalize same-sex relationships on the big screen and help those "realize how important it is to give gay people their rights."
"We still have a very long way to go... there should be many more stories and characters which explore the LGBTQ world in cinema," says filmmaker Alankrita Shrivastava, who has explored the subject matter in her movies.

These youth need and deserve to learn in settings inclusive of their experiences and that educate them necessary to stay safe and healthy. Many LGBTQ youths sit in classrooms where their teachers and textbooks fail to address their identities, behaviours and experiences appropriately. Sex education programs must be LGBTQ-inclusive. Inclusive programs are those that help the child understand gender identity and sexual orientation with age-appropriate and medically accurate information; incorporate positive examples of LGBTQ individuals, romantic relationships and families; emphasize the need for protection during sex for people of all identities, and dispel common myths and stereotypes about behaviour and identity.

So, I think everyone living in this world, either standard or abnormal has equal rights to live in this society with complete respect.

"Har Tarah Ka Pyaar Jaiyas Hai"

RECOLLECTION

Shrayosee Roy / 3rd Year / CSE Department

Remember?? Those days when we used to put on our parent's shoes or dresses, pretending to have grown up. Little did we know that growing up could turn into such an abyss. We could quickly sabotage the innocence that has kept us growing up all this time. We don't realize how fast time whizzes by, and we keep tracing our past mistakes. The thing that still warms my heart is that while the time has flushed by me, I vividly managed to have been able to bottle them up as memories and wrap them on the top shelf of the most cherished memories.

From those uncountable memories today, I will share a few unforgettable moments and experiences from my college life. A college is a new beginning in any student's life. 'College' this word gives us a sense of responsibility as well as freedom. Suddenly we start thinking that woo, we are grown up. Now we can do anything and everything.

All it started years back; the day was the 1st of August 2019. On the very first day of my college. I was feeling nervous, happy, and excited at the same time. The strange feeling that we all go through but can't explain exactly. So, with all these mixed feelings, I went to Hooghly engineering and Technology College, where I got admission for a B.TECH degree. With all my nervousness and excitement, I stepped into my college auditorium with my parents. It was the second floor of the faculty building where this Freshers program had been organized. Our seniors beautifully decorated the hall. All our respected professors and our beloved seniors welcomed us by putting 'Tips of Chandan' on our foreheads. Quite a different way to welcome the freshers. Yes, this is the tradition of HETC, "TILAK CEREMONY". It was a very different and homely feeling for me. I am sure all Hetcian started relating their first day of HETC with me. Hetcian can only understand this feeling.

They also arranged a few performances. I enjoyed the whole program. In between, our Principal sir, Secretary sir and HOD of all dept. introduced themselves, delivered motivating speeches, and shared their working experiences. Among all these, I still remember a few words our respected Principal sir spoke. He said that "Welcome to your second home. HETC is not only your college but also your second home, where you will learn real-life skills and ethics. Teachers will be there to teach your departmental subjects; besides that, they will always guide you as a mentor".

Today I realize that those words were very accurate. Faculty and departmental teachers are very supportive and always guide us in every situation.

Apart from this cultural program, our Basic Science and Humanities departmental professor gave us a small college tour. They took us to our 1st-year room. Then they asked us to sit there. Then all of the Basic science faculty members introduced themselves with their names and what subject they teach. They comfort our nervous faces by saying, "We are always here to guide you in every situation as a mentor." This is how my journey begins at Hoogly Engineering and Technology College. What do we imagine what college might be like?

STUDENT OF THE YEAR.. right? However, we realize the reality of college life once we enter college. We realize that life is not as easy as we thought. We go through a lot of changes when we enter college life. It is a big transition if we compare it with school life. College life means 1000 assignments, internal projects, semesters, and college fun every month. At college, students enjoy silly pranks with one another and enjoy every minute to the utmost. Especially the time spent at the college canteen and bridge is full of funny memories. There we not only eat and enjoy but do silly activities with one another.

I also have uncountable memories of the bridge and college canteen. The free time spent with friends at college canteens and going around with friends endear the soul. All those gossips over the bridge will be a special memory for me. Bunking those boring classes and gossiping over that bridge was fun for me. There were many memories like playing Dumb charades, taking pictures, recording funny moments, and pranking others. UFF!!! Amazing days.

“Let’s go to the canteen”, the magical words which made college life best with the best people. Sitting in the canteen and playing antakshari with friends while having food is the best combo.

Another most enjoyable part of college is FEST, TECH-FEST, and SPORTS. The buzz and enjoyment created on annual fests or occasions at the college level are very pleasing. So this year, I was part of the annual fest UTKARSHA 2022. It was one of the biggest celebrations at my college. This time I was part of the organizing committee, so apart from the enjoyment, I also had the experience of organizing any event and working as a team. I also gathered managing skills that will help me in the future. Before the fest’s final day, those 15 days of practice session was more enjoyable. No classes, No study pressure, only practice and enjoyment. Like another college fest, there were many performances by college students like dance, song, recitation, stand-up comedy, and a Fashion show. I took part in the Fashion show, and the theme of the ramp walk was SRK. I enjoyed my performance too. All the arrangements were just mind-blowing. Apart from all student performances, there was a guest performance by SNIGDHAJIT BHOWMIK as a solo singer and UNDERGROUND AUTHORITY. The show was undoubtedly the best. I can talk about many stories at my college fest, but this magazine will not be sufficient.

The best and the most amazing memories from my college life. These are the few memories from my college life. Now I am in 3rd year, just one more year I have in my hand to live college life. Afterwards, the journey is going to end.

I can feel the speedy wind of time that will wash over OUR presence. I will miss all fun in the canteen, spending time on the bridge. I will also miss the scolding from teachers. I will miss silly pranks and a few precious friends from HETC. I will miss the ground, field, auditorium, and classroom. I can feel the vacant air that will remark OUR absence...

Yes! OUR absence!

Yes! Here it ENDS!

MY DAD

Rahul Bera / 3rd Year / EE Department

He is my Dad,
He knows what's good and what's bad.
Though sometimes he gets angry,
But he never makes me sad,
He works whole day and night
To lift us to light.
A thousand claps he is worth,
Because he is the best dad on Earth.
He holds us all and never lets us fall.
He is very good looking,
Though he is very hard working.
He is a person I adore,
Because he is a person to endure.
He is the person I look up to,
Because I truly Love you My Dad.

WORK FROM HOME: A PARADIGM SHIFT

Zenia Banerjee / 3rd Year / CSE Department

'Work from home' was an alien term for the job industry until the advent of lockdown in the country. It has indeed been a paradigm shift for the job industry. Many employees have taken up this word as their daily mantra irrespective of their occupation or job domain. It has opened up a plethora of opportunities for people all across the globe.

Any person with access to a computer can now work from their respective homes. This was a new breakthrough in the stereotypical mindset of the working class and the norms in the job industry. Working from home provided an excellent opportunity to continue their jobs even during the pandemic. It provided the people with extra perks like networking with people globally, working during flexible timings and more.

Many students and even people who don't have 'relevant' degrees to be eligible for working in the IT industry are now working remotely in various tech companies. There has also been a paradigm shift in the hiring methods. Professionals now prefer skills over degrees. This is also one of the significant changes that have happened in the recent few times.

In the internet era, knowledge is not limited to just books and courses. With the incorporation of work-from-home jobs, people are working for companies half a million miles away from their homes. For youngsters and the current generation, working from home has been a blessing. Many employees want to continue working from their homes as it has drastically reduced the time they'd to spend commuting. It has also brought families closer during quarantine. People now have more time to spend with their loved ones. 'Time is money', and work from home has been a top pick for numerous employees due to the flexible timings in work from home jobs.

Every significant change in the world profoundly impacts people all over the world in both good and not-so-good ways. Similarly, work from home has been a hot topic of debate. Nevertheless, the pros of working from home outweigh the cons. Work from home has helped countless people manage their lives better. Mental peace and work culture are now priorities for the new generation of employees, which wouldn't have been the case if work from home didn't start in the first place. There has also been a boom in internet technologies and apps, which have helped generate more significant revenue for various sectors. The Tech industry is one of the major backbones of a country's economy; hence, due to the incorporation of work from home trend, there has been proliferous revenue and jobs for the people. After the pandemic, the drastic downfall in the economies of various nations is recovering at a decent pace, which wouldn't have been possible without the tech industry, which has seen a boom due to work-from-home trends. Thus, work from home has indeed been a paradigm shift globally.

CAMPUS LIVE

NSS Activity: International Matribhasa Divas

Date:21.02.2021
Time: 1:00 pm - 3:00 pm
Venue: College Campus
Number of Participants: 250
Organizers: Teacher: Mr. Swarup Samanta, Mr. Saurav Choudhury
Student's coordinators: Mr. Subhodeep Das

About the event:

"Amaar bhayer rokte rangano Ekushe February/Aami ki bhulte pari… (My brothers gave their blood for 21 February/Can I forget…)."

February 21 is celebrated as the International Mother Language Day, as declared by the United Nations in 2000. Bengalis the world over, however, have been commemorating the day as Bhasha Dibas or Shahid Dibas for more than six decades now. On 21st February,2022 the NSS Unit of HETC also celebrate the day in HETC campus and uploaded the programme on YouTube. (URL: https://www.youtube.com/watch?v=19hlu9SMyIU). This event, held on 21st February, witnessed participation of many talented students. The event started with a warm welcome by the host, Sayar Mill and initiated the event. The students participated in various events like dancing, singing, and poetry. The performance of the students was highly appreciated by everyone.

WEBINAR UNDER EK BHARAT SHRESHTHA BHARAT PROGRAMME

Date: 11.03.2022

Time: 11:00 AM - 12:00 NOON

Speaker: Mr. Souptik P. Choudhury, Life Member, Indian National Trust for Art and Cultural Heritage (INTACH)

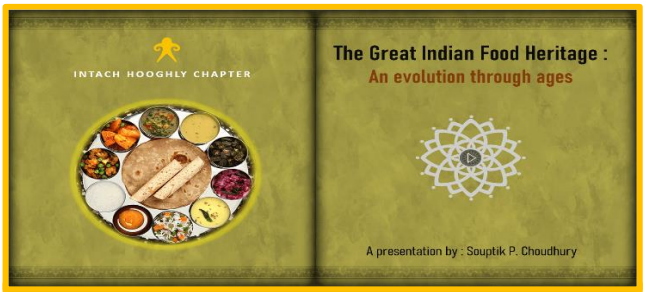
Topic: The Great Indian Food Heritage: An evolution through ages

Total Attendee: 108

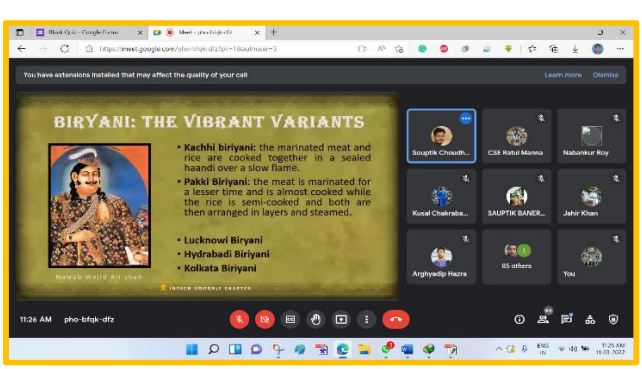
Google Meet Code: https://meet.google.com/pho-bfqk-dfz

Technical Host: Mr. Swarup Samanta

Teacher Coordinator: Mr. Swarup Samanta, Mr. Saurav Chowdhury



The NSS Unit of Hooghly Engineering & Technology College arranged an online webinar on the topic 'The Great Indian Food Heritage: An evolution through ages' under Ek Bharat Shreshtha Bharat – Azad Ka Amrit Mahotsav Programme. The food habits of a culture or a country or a group of people is influenced by the regional geography, religious beliefs, economy, trade and exchange and surprisingly, war and invasion. The cuisines of a culture are passed through one generation to another, sometimes, going through various additions and subtractions. Through this particular topic, the concept of unity through diversity was presented in front of the students as sometimes, the food of a particular culture is adopted by another culture in a modified form. The participants were enlightened and enjoyed very much. The webinar concluded at 12 noon with a vote of thanks to the speaker.



73rd Republic Day (Flag Hoisting and Covid awareness program)

Event Name: 73rd Republic Day (Flag Hoisting and Covid awareness program)
Date: 26.01.2022
Time: 08:00 am – 11:15 am
Total Attendee: 72 [Staff: 49; Students: 23]

Teacher Coordinator: Mr. Swarup Samanta and Mr. Saurav Chowdhury

About the event:

On 26 January 1950, the constitution of India came into force, and our country, India became a republic. 26th January 2022 was observed as the 73rd Republic Day of India. To celebrate the same, a small program was organized on our college campus on 26th January 2022 under the banner of Azadi ka Amrit Mahotsav. Like every year, this year, also the students and faculty members of our Hooghly Engineering and Technology College had organized a grand program on the occasion of this 73rd Republic Day. Everyone was feeling very happy that day because it was a matter of great pride for all of us. The program started with flag hoisting at 8:30 am as usual. Dr. Smitadhi Ganguly, Principal-in-Charge, HETC hoisted the national flag and gave a motivational speech on the topic "Republic Day and the present Covid situation". This was followed by some speeches on patriotism and singing the national anthem. Some students also performed patriotic recitation/singing and different types of performances. After the performances, NSS volunteers went to the local area to distribute masks to the common people to raise covid awareness. In the end, the program was concluded by distributing sweet boxes to all the students.

Photos of the events:

International Women's Day 2022

Event Name: International Women's Day 2022

Date: 08.03.2022

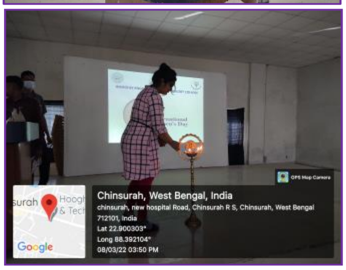
Time: 03:30 PM -5:35 PM

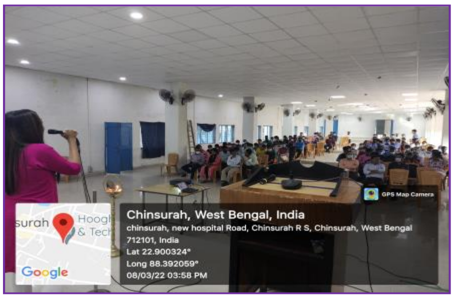
Total Attendee: 122

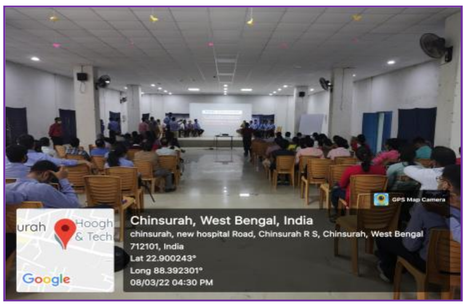
Teacher Coordinator: Mr. Swarup Samanta, Mrs. Sudeshna Banerjee, Mr. Saurav Chowdhury

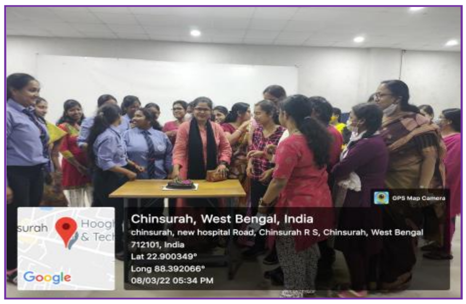
Student Coordinator: Ms. Ahana Paul, Mr. Subhodeep Das, Mr. Rudradeb Chatterjee

On the occasion of International Women's Day 2022, the NSS Unit and Magazine Committee of Hooghly Engineering & Technology College jointly organized a small ceremony to felicitate the Female stakeholders and a Panel Discussion on the topic 'The idea of women's empowerment in a regressive society like ours is just a myth' for the students on 08.03.2022 at the college Auditorium from 3:30 p.m. onwards. The programme commenced with the lamp lighting ceremony followed by some inspirational speeches by Dr. Smitadhi Ganguly, Principal In-Charge, HETC, Dr. Avijit Maity, Secretary, HETCS and Dr. Aishwarya Mukherjee, HOD, BSH Department, HETC. The programme consisted of songs and recitation by students as well as staff members. After the performances, the panel discussion was conducted by Mr. Subham Ganguly, Assistant Professor, BSH Department, HETC. The participants shared some really interesting ideas and concepts. Overall, it was a very lively, informative and engaging conversation. At 05:35 PM, the programme was concluded with a cake-cutting ceremony.









Panel Discussion Result:

Name	Department	Year
Riju Roy (First)	ME	4
Foyjun De (Second)	ECE	2
Abhishek Bhattacharya (Third)	ECE	2
Avirup Mukherjee	CSE	3
Abhishek Manna	ECE	3
Megha Sasmal	ECE	3
Mouli Biswas	ECE	3
Trisha Roy	ECE	3
Sukalpa Malo	ME	3
Riya Bhattacharya	ECE	2
Arghyadip Hazra	ME	2
Sayar Meel	ECE	3

Clean India

Date:28.10.2021
Time: 12:30 pm - 02:30 pm
Venue: College Campus
Number of Participants: 55
Organizer: Mr. Swarup Samanta

Induction Program 2021-22

Reported By Dr. Rajdip Paul
HOD, CE Department, HETC & Convener, Induction Program Committee, HETC

Today, there is a livid rush for engineering, with students sometimes being unable to determine their interests and goals. This is a big contributor to the current condition of discouragement among undergraduate students. Success in gaining admission to the chosen college but failing to obtain the desired branch, with peer pressure causing complications, leads to a demotivating and toxic peer environment. For some, the start of dormitory life without constant parental supervision, combined with a terrible daily schedule, exacerbates the situation.

When new students arrive at a College, they bring with them a variety of ideas, backgrounds, and preparations. They are thrust into a strange environment, and many of them have little prior experience of the decorum to be maintained in a college. Hence, one of the most important tasks is to welcome new students to the college and prepare them for their new journey. One of the most difficult transitions in a student's life is from high school to college. As a result, it must be treated seriously and as more than just a mere orientation program.

In light of these facts, the All India Council of Technical Education (AICTE) proposed in 2018 that the Student Induction Program (SIP) be held, along with a complete guide for newly admitted students. The SIP's goal is to assist new students in adjusting to their new surroundings, instilling the institution's ethos and culture in them, assisting them in forming ties with other students, faculty, and staff members, and exposing them to a sense of broader purpose and self-exploration.

Induction is a generic word that refers to the entire process of incumbents adjusting to or acclimating to their new jobs and environments. In other words, it is a well-organized event aimed at informing newcomers about the environment at a specific organization and connecting them with the people who work there.

The AICTE proposed a 3-week SIP to engage new students as soon as they arrive at the college; regular classes would commence after that. The incumbents learn about the institution's policies, methods, practices, culture, and values at the outset of their induction, and their mentor groups are formed. After that, the everyday activities begin with the following.

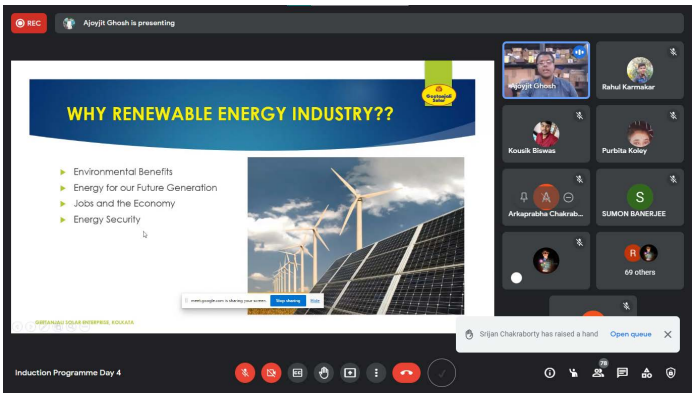
- Physical Activity
- Creative Arts and Culture
- Mentoring & Universal Human Values
- Familiarization with College and, Department
- Literary Activity
- Proficiency Modules
- Lectures & Workshops by Eminent People
- Visits in Local Area
- Extra-Curricular Activities in College
- Feedback and Report on the Program

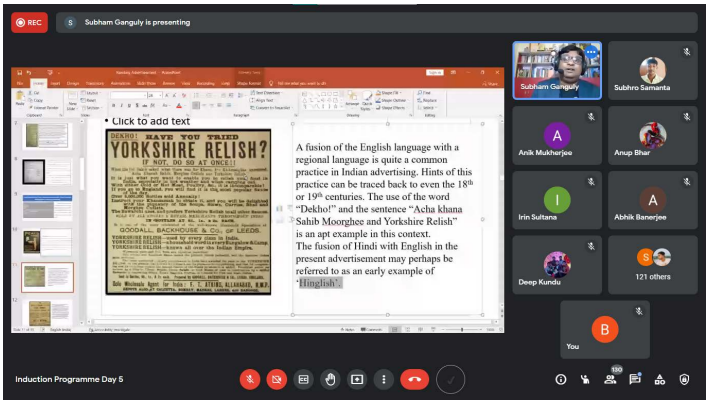
Due to the prevailing pandemic stunning the entire globe, the SIP in the last academic session (2021-22) could not be held in the college. Rather, AICTE proposed conduction of SIP in virtual mode only and, consequently, many of the activities mentioned above could not be included in the schedule. Hence, eventually, a 2-week long SIP was conducted during a span of 22nd October to 08th November 2021. In total 23 sessions of 1-hour duration each, in Google Meet platform was held comprising the following topics.

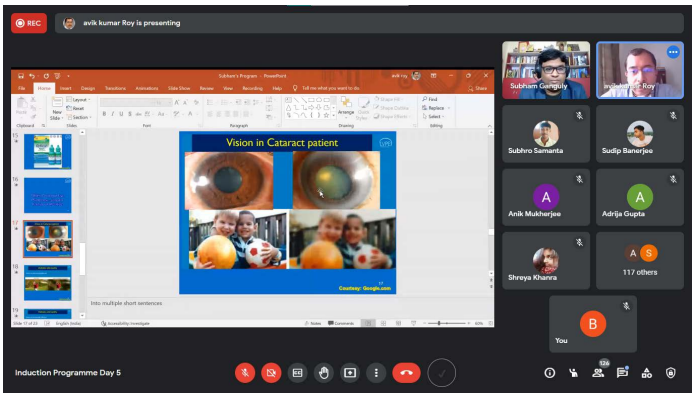
- Lectures by Eminent People and Alumni
- Universal Human Values
- Scholarship Awareness
- NPTEL, Swayam, and Moocs

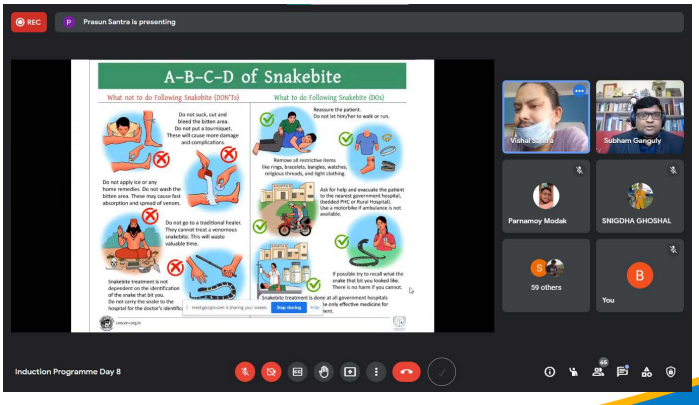
- Mandatory Additional Requirements (MAR) of the university
- Internshala
- General quiz session
- How to prepare for Training and Placement from Day-1

The lectures by Eminent People and Alumni in the industry were delivered on diversified topics, e.g., Tech Talk on IoT, Endangered Environment, Green Energy, and Reading Advertisement as a Text. Some topics were very relevant in the current era of COVID-19, such as Managing Computer Vision Syndrome in the era of Online Learning, Transformation of business forever in the IT industry because of COVID-19. General knowledge-building sessions like Studying/ Researching Snakes and preventing Snakebites in the Indian Subcontinent, Astrology, and Astronomy, Importance of Science Education and Scientific Temperament in National Education Policy, 2020, Heritages in Hooghly: An Introductory Approach, were also conducted to add variety and avoid monotony in attending online sessions a day in day out. After the end of the SIP, Feedback on the program was asked based on the guidelines of AICTE. Receiving an overwhelming response from the students indicate that the SIP was successfully conducted in the last academic session.









UTKARSHA 2k22

Reported By Sreyasi Rupa De
Deputy Registrar, HETC & Convener, HETCS Skill Development Centre

"UTKARSHA", the name itself speaks a lot amongst the members of HETC family. Hooghly Engineering & Technology College celebrates this vibrant annual cultural program as Utkarsh 2022.

Like every year, this year also, a colorful and memorable Cultural Fest Utkarsha 2022 was held on 25th March at Aqua Marina Water Theme Park, Hooghly. This event was whole day long.

At around 11.00 a.m. onwards the event came to live with the inauguration of Utkarsha 2K22 by our honorable hon'ble Secretary HETCS, Dr. Avijit Maity and Principal-in-Charge HETC, Dr. Smitadhi Gangly and due to health issues President HETCS, Prof.(Dr.) T. K. Bandyopadhyay did not attended the Programme however he sent his wish for grand success of the mega event. 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". The theme of the ramp was "Shah Rukh Khan Movie". 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.

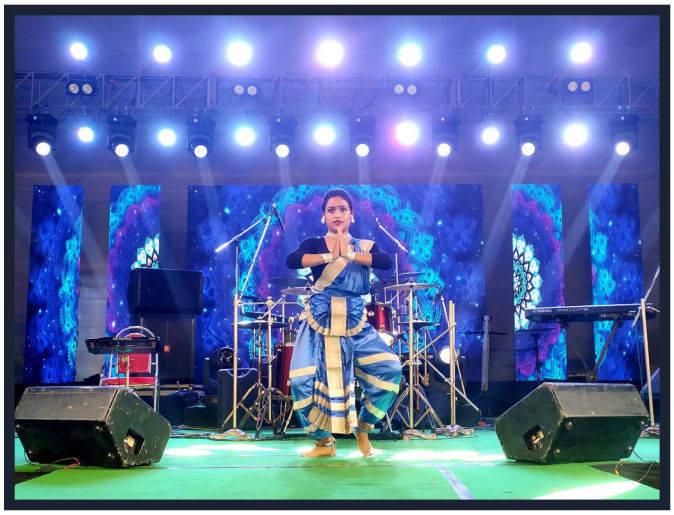
In between the events a prizes distribution ceremony was organized for the pass out students their brilliant achievements in career in the following segments

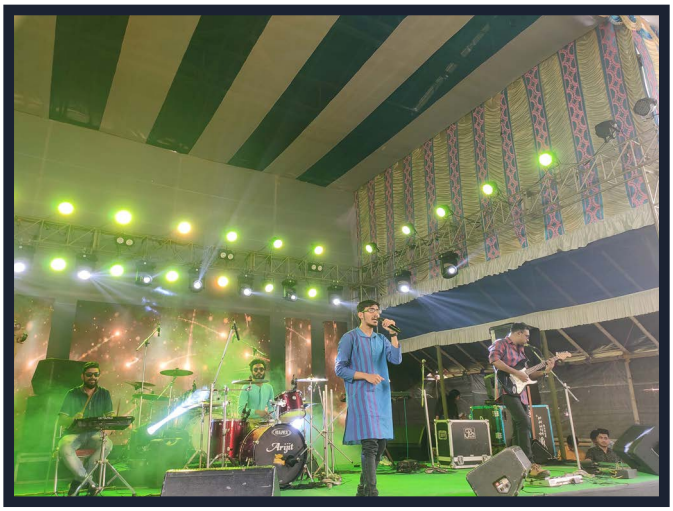
Sl. No.	Department	Segment	Name of the Students
1	CSE	Highest Package	Ankit Patra
		Maximum no. of job offers	Ryme Majumdar
2	ECE	Maximum no. of offers	Ayushman Manna
		2nd **highest no. of offers**	Brishti Sarkar
3	EE	Maximum no. of offers	Sourav Dutta
		2nd **highest no. of offers**	Sayantan Chakraborty
4	ME	Highest Package	Adrish Kumar Mitra
		Maximum no. of offers	Sukhendu Sekhar Nath
5	CE	Highest Package	Kumar Aman Verma
		Highest Package	Sourav Samanta

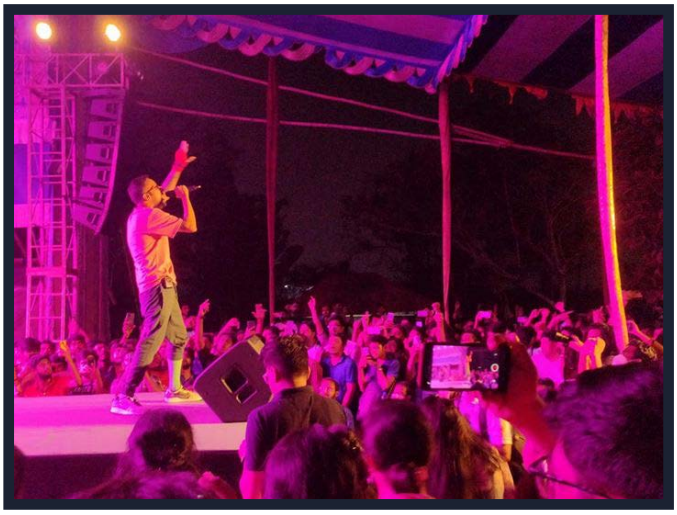
After the in-house events it was time to rock the stage by external artists. At the evening the ground was lit up by the mesmerizing performance of Snigdhajt and Underground Authority. Snigdhajit heated up the audience with some rocking songs like "Na jane Koi", "O Meri Jaan", "Teri diwani" etc. After his awesome performance, the stage was handed over to Underground Authority who made the audience banged their heads with the songs like "Insaaf ka Qaatil", "Hogi Subha" and others.

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 2K22 as well as all the Teaching Non-Teaching staff members of HETC, all the Students & Stakeholder for their whole hearted support for the mega event.







TECHetc 2k21

Reported By Dr. Pratyay Debnath
Associate Professor, BSH Department, HETC & Convener, TECHetc 2k21, HETC

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. In general, the event is conducted on HETC campus but due to pandemic, the 7th edition of the "TECHetc" was conducted in virtual manner in a completely different way.

TECHetc 2k21 was held on 15-16th September, 2021 where 228 students from different colleges and 186 students from different schools participated in a total of 13 events for college students and 2 events for school students. TECHetc always dreams of thinking "one step ahead". Since the event was conducted virtually, it was necessary to change a few events from the last year and new concepts were also blended.

Some of the interesting events of this year were "HUNT FOR FUN", "MATH MANIA", TECHNICAL CROSSWORD. People those who opted for more specialization and hardcore technical events got their genres in "CODE-2-DUO", "CODE-RE-STYLE", "CIRCUITECH", Civil-O-Pedia", µ-MAT", "INSTANT CIRCUIT", "insta-PLAN" and other technical events. Most attractive events were obviously the gaming events like online "CHESS" and "8 BALL- POOL". As of last year, this year also there was a responsive participation by the school students in their respective events. Since the event was conducted virtually, it was not possible for the committee to conduct some of the popular and interesting events like, "MODEL DISPLAY", "SUBWAY SURFER" "BRIDGE THE GAP" "ROBOZIGGER" and creative events like "ART CARNIVAL & DIGITAL PAINTING".

It is obviously a best platform to those scholastic 'techy' brains to get an essence of these technical events. The "backbone" behind the fest comprised of the Faculty and Staff members and also the 50 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.

EVENT NAME	POSITION	WINNER'S NAME	DEPARTMENT/ CLASS	INSTITUTE'S NAME
µ MAT	1ST	SUKANTA KARMAKAR	ECE	H.E.T.C
	2ND	AYAN BAG	ECE	H.E.T.C
	3RD	DEBJIT DAS	ECE	H.E.T.C
MATHMANIA (COLLEGE)	1ST	ANKITA DEY	CSE	H.E.T.C
	2ND	AMIT BISWAS	CE	H.E.T.C
	3RD	VIJAY KUMAR SINGH	EE	H.E.T.C
MATHMANIA (SCHOOL)	1ST	ARIJIT CHATTERJEE	XII	DON BOSCO,BANDEL
	2ND	ROUNAK PAL	VIII	TALPUR PATHSALA
	3RD	NEHA SAHA	XII	HINDMOTOR HIGH SCHOOL
CodeRESTYLE	1ST	DEBARGHYA MUKHERJEE	CSE	H.E.T.C
	2ND	PRITHIBA DAS	CSE	H.E.T.C
	3RD	ARITRA RANJAN CHOWDHURY	CSE	H.E.T.C
Cross Word CSE	1ST	KRISHANU CHINYA	CSE	H.E.T.C
	2ND	RAHUL RANJAN	CSE	H.E.T.C
	3RD	MEHULI DAS	CSE	H.E.T.C

Cross Word ECE	1ST	DEBJYOTI PAL	ECE	H.E.T.C
	2ND	SOUMIN DUTTA	ECE	H.E.T.C
	3RD	DEBJIT DAS	ECE	H.E.T.C
CHESS(SCHOOL)	1ST	RITOJOY MANDAL	VIII	DON BOSCO,BANDEL
	2ND	SOUNAK BISWAS	VIII	DON BOSCO,BANDEL
	3RD	SWAPRAVA DEBNATH	VIII	DON BOSCO,BANDEL
LogiCAD	1ST	RUPAYAN BISWAS	CE	H.E.T.C
	2ND	SAMBIT SAHA	CE	H.E.T.C
	3RD	DEBABRATA SINHA ROY	CE	H.E.T.C
8 BALL PULL	1ST	SARTHAK SRIVASTAV	CSE	H.E.T.C
	2ND	RISHIRAJ BAGCHI	CE	H.E.T.C
	3RD	SOUNAK CHAKRABORTY	ECE	H.E.T.C
HUNT FOR FUN	1ST	BISWAJIT KUNDU	CE	H.E.T.C
		GODHULI SARKAR	CE	H.E.T.C
	2ND	ANKITA DEY	CSE	H.E.T.C
		PRATUSHA PANDEY	CSE	H.E.T.C
	3RD	SOUMYADEEP SINGHA	CSE	H.E.T.C
		ADITI PAUL	CSE	H.E.T.C
Civil-O-Pedia	1ST	SAYAN MUKHERJEE	CE	H.E.T.C
		BIRENDRA SHAW	CE	H.E.T.C
	2ND	RISHIRAJ BAGCHI	CE	H.E.T.C
		KUNTAL NASKAR	CE	H.E.T.C
	3RD	SOMOSHREE DEY	CE	H.E.T.C
		SWARNABHA SARKAR	CE	H.E.T.C
Circuitech	1ST	SAYAN GUPTA	ECE	H.E.T.C
	2ND	ARKA GUGHA	ECE	H.E.T.C
	3RD	ABINASH KUMAR CHOURASIA	CSE	H.E.T.C

Code 2 Duo	1ST	DEBARGHYA MUKHERJEE	CSE	H.E.T.C
		KOULIK DAS	CSE	H.E.T.C
	2ND	KRISHANU CHINYA	CSE	H.E.T.C
		PRITHIBA DAS	CSE	H.E.T.C
	3RD	ABHISHEK MANNA	ECE	H.E.T.C
		SOUNAK CHAKRABORTY	ECE	H.E.T.C
CHESS	1ST	RISHIRAJ BAGCHI	CE	H.E.T.C
	2ND	SHRIJON BASU	CE	H.E.T.C
	3RD	RANA DAS	PHYSICS HONS.	HOOGHLY MOHSIN COL-LEGE
CrossWord(ME)	1ST	ARPAN MANDAL	ME	H.E.T.C
	2ND	ARITRA CHATTERJEE	ME	H.E.T.C

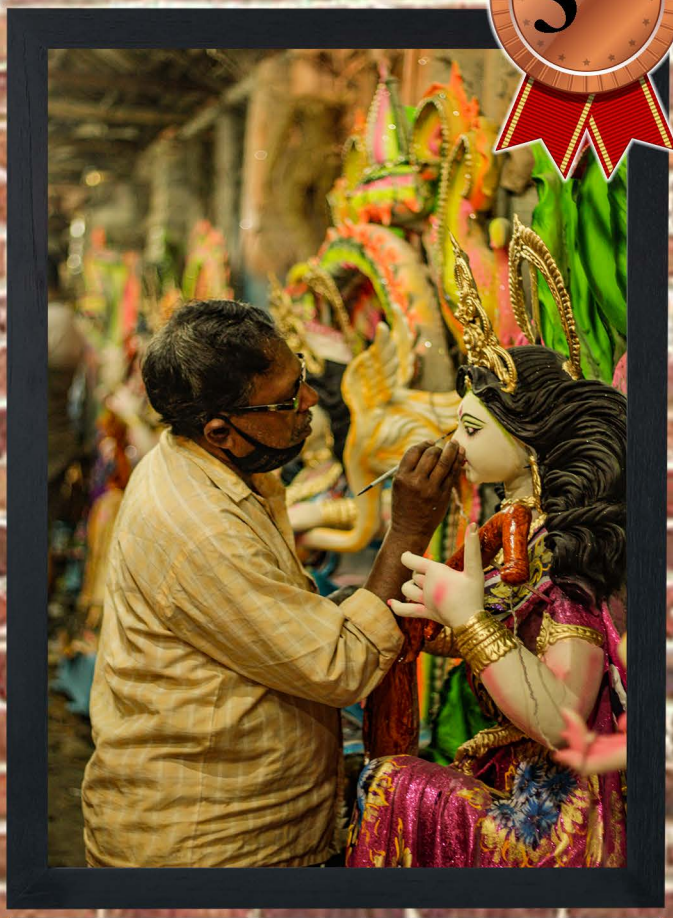
insta-PLAN	1ST	NIRANJAN MAJHI	CE	H.E.T.C
		DEBABRATA SINHAROY	CE	H.E.T.C
	2ND	CHIRANJEEB KUNDU	CE	H.E.T.C
	3RD	RUPA HAZRA	CE	H.E.T.C
		SOUMEN DAS	CE	H.E.T.C
CrossWord(CE)	1ST	SAYAK KUMAR KHANRA	CE	H.E.T.C
	2ND	GAURAV MISHRA	CE	H.E.T.C
	3RD	ANINDYA SUNDAR GUPTA	CE	H.E.T.C

PHOTO COMPETITION

1st

Debraj Das / CSE / 1st Year

3rd

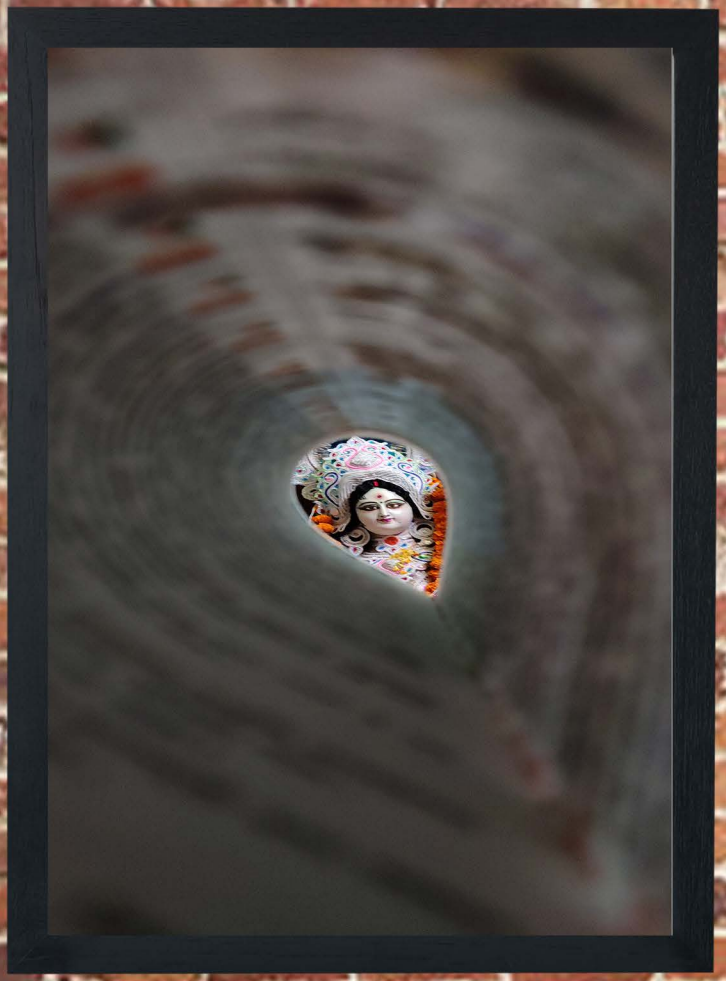


Swastik Roy / CSE / 1st Year

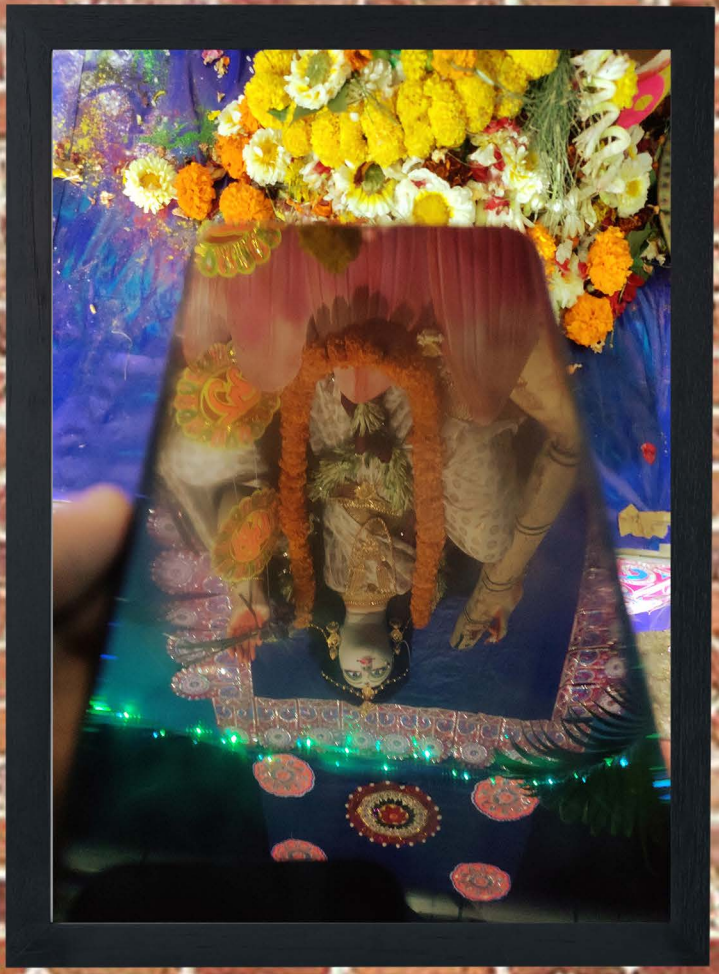
2nd

Anushka Roy / ECE / 1st Year

RUNNERS-UP



Soumyadwip Bhawal/ CE/ 3rd Year



Suman Jana / EE / 4th Year

Anubhav Palit / ECE/ 1st Year

কবির বর্ম

দিনবদলের ব্যাপার স্যাপার

দিনকাল আজ আগের থেকে
পাল্টে গেছে অনেক,
পুরোনো দিনের সাবেকি জিনিস
পড়ে আছে গোটাকয়েক।
ছেলমেয়েরা আজকাল সব
এগোচ্ছে স্পীড নিয়ে
ফাইভজি এসেছে,অন্যজি-গুলো
হয়ে গেছে একঘেয়ে।
ফোন ল্যাপটপ সবাইকে যেন
হাতছানি দিয়ে যায়
মাথার ভিতর গেম-এর পোকা
পড়াশোনা আজ হয়ে গেছে বোঝা,
জীবনের সংশয়।
তাই বুঝি ছোটো শিশুদেরও
আজ টিউশন নিতে হয়!
ফেসবুক-এ মুখ বেঁকিয়ে ফটো তোলবার
পড়ে গেছে বড়ো দায়।
সারাদিন তারা হোয়াটসঅ্যাপ-এ বিজি
স্ট্যাটাস চেঞ্জ করতেই সবাই
অষ্টপ্রহর রত।
প্রোফাইল পিকচার যেন ভালো হয়,

এটাই জীবনের মোটো।
উন্নয়ন হচ্ছে সবার
হেঁয়ালি শুনবো কত !!

রাহুল বেরা
ইলেকট্রিক্যাল ইঞ্জিনিয়ারিং
তৃতীয় বর্ষ

মরণের আশা

বৃদ্ধা দুঃখীনী মা
পুত্রহারা,
দেখিতেছে খুঁজিতেছে
যেন দিশাহারা ।

শীর্ণ জীর্ণ তার
শরীরেতে ভাঁজ,
দীর্ঘশ্বাস তোলা ছাড়া
নেই কোনো কাজ ।

খোকা মারা গেছে তার
কতো হল কাল,
চোখে তবু ভাসে আজ
ছাড়েনিকো হাল ।

চোখে জল, নেই বল
হাড় গুলো হীন,
কিভাবে কি কেটে যায়
স্বপ্ন মলিন ।

বুড়োটাও যায় যায়
বিছানা সে ছাড়ে না,
মরিবারে বেঁচে আছে
ফিরে কেউ দেখে না ।

দিন যায় কাল যায়
সময় যেনো বয় না,
আকাশেতে চেয়ে বলে
মরন কেনো হয় না।

রাজীব কুমার মন্ডল
অ্যাসিস্ট্যান্ট প্রফেসর
মেকানিকাল ইঞ্জিনিয়ারিং

গরমের ইতি কথা

রাজা কহে মন্ত্রী,
কেনো এতো গরম?
রোদ্দুরেতে বের হলে
ঘর্ম আসে চরম।

মন্ত্রী শুনে ঘাবড়ে গেলো,
ঘুরলো যেনো মাথা।
বললো রাজন, বাহির হলে
ধরব মোরা ছাতা।

রাজা কহে মন্ত্রী
তুমি পড়েছো বুঝি কাতে,
প্রখর রোদে হাটতে গেলে
কাজ কি হয় তাতে?

রোদ যেনো আর না লাগে,
ব্যবস্থা করো আজ।
বাড়ি থেকে বাহির হলে
লাগবে কেনো আঁচ?

তুমি শুধুই বেতন লহ
ফাঁকা তবু চুল।
ছাতা দিয়ে গরম কমে?
এটা ভাবা ভুল।

এমন সময়, এক চাষি
পড়লো পায়ে এসে ।
বললো রাজন ক্ষমা করুন
খাজনা দেবো কিসে ।

জমির ফসল ফলতে
সৌর শক্তি লাগে ।
গরমে একটু ঘর্ম হলে
কি আর কষ্ট তাতে ।

খাদ্যশস্য না ফলিলে,
মরবে সকল চাষি ।
রাজকোষও শূন্য হবে,
খাবে কি দেশবাসী।

ঠিক বোলেছো বন্ধু আমার
বলেন রাজা হেসে।
সোনার ফসল ফললে দেশে
ভাবনা আসে কিসে।

রোদের চার যতোই লাগুক
নেইকো তাহার ভার।
নিজের হাতে পরিয়ে দিলো
চাষিকে মুক্তা হার।

রাজীব কুমার মণ্ডল
অ্যাসিস্ট্যান্ট প্রফেসর
মেকানিকাল ইঞ্জিনিয়ারিং

আমার রবীন্দ্রনাথ

আমার রবীন্দ্রনাথ
'ভারতী'-তে করে "করুণা"-র ছলে প্রথম আত্মপ্রকাশ,
আমার রবীন্দ্রনাথ
আনে 'বিপ্রদাস-কুমুদিনী-মধুসূদন'-এর "যোগাযোগ"-এর ইতিহাস।
আমার রবীন্দ্রনাথ
তোলে "চোখের বালি"-তে বিধবা 'আশালতা'-র ইচ্ছাপ্রকাশ,
আমার রবীন্দ্রনাথ
দেখায় "রাজর্ষি"-তে ত্রিপুরার রাজকার্যের পরিহাস।

আমার রবীন্দ্রনাথ
'কমলা-হেমনলিনী'-কে সম্মুখে রেখে তোলে সমাজের "নৌকাডুবি",
আমার রবীন্দ্রনাথ
"চতুরঙ্গ" রচনায় জাগ্রত করে চেতনা প্রবাহ রীতির ছবি।
আমার রবীন্দ্রনাথ
প্রেমের সংসারে গড়ে "ঘরে-বাইরে"-র রাজনৈতিক চক্রব্যুহ,
আমার রবীন্দ্রনাথ
"গোরা"-য়দেখায় ব্রিটিশদের করা সমাজকে দুর্বিষহ।
আমার রবীন্দ্রনাথ
'সরলা'-র মাধ্যমে "মালঞ্চ"-এ আঁকে সমাজে নারীর স্বরূপ,
আমার রবীন্দ্রনাথ
"শেষের কবিতা"-য়'অমিত-লাবণ্য'-এর প্রেমকে দেয় অন্য রূপ।

সৌরভ কুন্ডু
ইলেকট্রিক্যাল ইঞ্জিনিয়ারিং
তৃতীয় বর্ষ

মুখোশ

মুখোশে মুখিয়ে মর কেন ভাই,
মুখোশ তোমার জন্মগত,জানোনা এ সত্যটাই।
মুখোশ খসে না,মুখোশ গজায় ------
সময় সনে আজব কায়দায় শুধুই বদলে যায় ।।

শৈশবের অনাবিল হাসি,প্রাণোচ্ছল বহমান অন্তর যখন,
বাস্তবের চাহিদাও স্বার্থপূরণের রুক্ষ প্রান্তরে হয় খানখান্—
তখনই গজায় মুখোশ – বেঁচে থাকার আর্তিতে,অনাবিস্কৃত অভিযোজনে,
তারে যায়না দেখা অথচ জানান দেয় সে অস্তিত্বের– অনুভবে ও মননে।।

মুখোশে মুখোশে শুরু হয় অগণিত দ্বন্দসম যুদ্ধের –
প্রেমের,বঞ্চনার,ক্ষমতার,দম্ভের,অহংকারও স্বার্থপরতার।
সভ্যতার এই অভিশাপে ক্ষতবিক্ষত অন্তরে ঝরে যায় কত প্রতিভা,কত প্রাণ,
তাই মরমে শরম আনো,হিয়ায় জ্বালো স্নিগ্ধ প্রদীপশিখা সম জ্ঞান।।
ছিঁড়েফেলো সামাজিক মাধ্যমের ভোগসর্বস্ব 'হামবড়াই'এর শুষ্ক অর্ন্তজাল,
অন্তরের বিকশিত মানবিকতার শান্তি ধারায় ধুয়ে যাক মুখোশের হলাহল।।

সম্পূর্ণা পাল
ইলেকট্রনিক্স এন্ড কমিউনিকেশন ইঞ্জিনিয়ারিং
প্রথম বর্ষ

গ্রহণ

ধূসর সকাল আসলে
জ্যোতিষ্কের আলোয় ভেজা
এক ক্লান্ত পথিক।
আমি বরফ ভাঙতে শিখেছি
মৃতদেহের কাছ থেকে।
শিরদাঁড়া ভাঙা আর
ঘুরে দাঁড়ানোর মধ্যে
পার্থক্য একটা প্রত্যাখান।

জল ও শূন্যের বিপদসীমায়
আমি তলিয়ে যাচ্ছি;
যে শ্যাওলায় এতদিন
পা পিছলে যেত, সে
এখন আমায় আষ্টেপৃষ্ঠে
আঁকড়ে ধরেছে ... বাঁচার আশায়।

পামেলা পাল
কম্পিউটার সাইন্স এন্ড ইঞ্জিনিয়ারিং
প্রথম বর্ষ

এমন যদি

পাহাড়ি পথে সন্ধ্যে নামছে সবে-
সিঁদুর রাঙা আলোয় হঠাৎ যদি,
অনেক পুরোনো সেই চেনা মুখ আবার;
মধ্যিখানে কয়েক দশক পার।
অনেকখানি বদলে গেছে ঠিকই,
বদলায়নি তো চোখের চাউনি তাঁর।

আমার তখন কাঁচের ভারী ফ্রেম,
বৃদ্ধ কোমর বয়েসের ভারে কাঁপে -
পা দু'টো তো অবলম্বন শুধু, লাঠির জোড়ে হাঁটছি মেপে মেপে।
কিন্তু তোমায় চিনেছি একবারেই,
তুমিও চিনেছ একইরকম ভাবে-
সময় হয়ত দূরত্ব বাড়ায় কিছু, ছাপ ফেলেনি এতটুকুও স্বভাবে।

একটু কাছে এসে বললে তুমি, 'শেষ দেখা যেন হয়েছিল ঠিক কবে!
বোঝাই যাচ্ছে চেহারা দেখে তোমার, বয়েস এখন সত্তর-আশি হবে। '
আরো বললে, ' এখনো আগের মত, কখনসখন আমার ছবি দেখো?
আপনমনে সময় সুযোগ পেলেই, আগের মত কবিতা কি আর
লেখো?'
তুমি বললে, 'সর্দিকাশি হলে, সময় মত ওষুধপথ্য খাও!
মনের মতন বই পেলে কি আজও, কাজ ভুলে গিয়ে ওতেই ডুবে
যাও!'
বলছ তুমি, 'এখন দিনের শেষে, আমার কথা মনে পড়ে একবারো!
লিখতে বসে এখনো আগের মত, কথার ঝোঁকে কখনো ঘুমিয়ে
পড়ো? '

আমি তো শুধুই বোকার মত শুনি, তোমার কথা বন্যা হয়ে ছোটে
অনেক কথাই বলব বলব করেও, হয়না বলা জরাগ্রস্ত ঠোঁটে।
আয়না আমার ঝাপসা দিনের আলো, কুয়াশা হয়ে উঠছে গরম
পোশাক,
হারিয়ে গেছি সেই কবেকার আলোয়, সবটা না হয় নাইবা লেখা
থাক।

প্রিতম দে
ইলেকট্রিকাল ইঞ্জিনিয়ারিং
প্রথম বর্ষ

কিছু

কিছু স্বভাব পাল্টে যায় সময়ের সাথে,
কিছু অভাব আর্তনাদ করে নিস্তব্ধতার রাতে।
কিছু শূন্যতা গ্রাস করে স্মৃতির চিলেকোঠায়,
কিছু নিস্তব্ধতা কোলাহল করে সাফল্যের দোরগোড়ায়।।

অনিরুদ্ধ মাঝি
মেকানিকাল ইঞ্জিনিয়ারিং
দ্বিতীয় বর্ষ

শিক্ষাই জীবনের ছন্দ

শিক্ষাই জীবনের কবিতার ছন্দ,
চিনতে শিখিয়ে দেয় কি ভালো, কি মন্দ,
শিক্ষাই জানি প্রাণ ধারণের নিঃশ্বাস,
মনে আনে উদ্যম-উৎসাহ আর বিশ্বাস।
শিক্ষা চিনিয়ে দেয় মিথ্যা ও সত্য,
অজ্ঞতা ব্যাধিতে যা উপাদেয় পথ্য।
শিক্ষা শিখিয়ে দেয় ঠিক পথে চলতে,
আশাহীন ভাষা পায় সোজা কথা বলতে।
শিক্ষা বোঝায় এই জীবনের মূল্য,
অভাবেও স্বভাবকে রাখে আনন্দ ও উৎফুল্ল।
শিক্ষা শক্তি দেয় প্রাণপণে লড়তে, আনন্দ মূলধনে জীবনকে ভরতে।
শিক্ষা মনকে দেয় গতিময় স্পর্শ,
বিপদে শক্তি দেয় করে না বিমর্ষ।
শিক্ষা দৃষ্টি দেয় মানুষকে চিনতে, ফোটায় প্রীতির ফুল ভাবনার বৃন্তে,
শিক্ষাই পারে সারা পৃথিবীকে জাগাতে,
শিক্ষাই শিক্ষাকে দেয় নব শিক্ষা,
ভিখারীকে রাজা করে শিক্ষার ভিক্ষা।

অমিত কুমার বক্সী
ইলেকট্রনিক্স এন্ড কমিউনিকেশন ইঞ্জিনিয়ারিং
প্রথম বর্ষ

দাদাগিরি

দাদাগিরি দেখার জন্য যাই
জি-বাংলার সেটে,
প্রথমেই আটকে দিল
ঢোকার সময় গেটে
পাশ দেখাতেই ছাড়া পেলাম
ভিতরে তে যাবার,
হলে ঢুকে দেখে শুনে
অবাক হলাম আবার।
বাজনা বাজে তালে তালে
জ্বলছে অনেক আলো,
ব্লেজার পরে এলো সৌরভ
দেখাচ্ছে দারুণ ভালো।
একটা একটা বলছে কথা
খেলা হলো, শুরু।
উত্তর দাতাদের বুকের মধ্যে,
হচ্ছে দুরুদুরু।
পাওয়ার প্লে, স্লগ ওভার
দিচ্ছে কত গুগলি,
দেখে শুনে ভুলেই গেছি,
বাড়ী আমার হুগলী।
সবার শেষে শুরু হলো
বাপী বাড়ী যাবার পর্ব,
এখান থেকেই নাম্বার তুলে
বাড়াবে জেলার গর্ব।
উত্তর দিতে পারছে যারা
দারুণ হাসি খুশি,
না পারলেই সেটের মাঝে
হচ্ছে ঠুসোঠুসি।
একটু একটুসময় কাটে
খেলাও হলো ভঙ্গ,
দাদার থেকে প্রাইজ নিয়ে
কেউ বা করে রঙ্গ।
জি বাংলার কারিগরদের
সত্যি বাহাদুরি
মিষ্টি হাসি দাদার মুখে
সত্যি দাদাগিরি।

অমিত কুমার বক্সী
ইলেকট্রনিক্স এন্ড কমিউনিকেশন ইঞ্জিনিয়ারিং
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দেশমাতৃকা

মা রে , তোর বুকে কি কোনো কষ্ট হয়নি
যেদিন তোর ছেলে তোকে বিক্রি করলো
সাম্রাজ্যলোভী ওই বণিকদের হাতে,
দুশো বছর ধরে কারারুদ্ধ বন্দিনী
হয়ে তুই কিভাবে কাটালি হে মা বল?
ওদের কঠিন নখের কর্কশ শব্দ,
ওদের তীক্ষ্ণ দাঁতের নির্মম কামড়
তুই কিভাবে সহ্য করেছিলিস রে মা?
তাহলে কি মা ওই বুকচাপা কষ্টের
প্রতিশোধের জন্যই অগ্নিবান গুলি?
যার তাপে পুড়ে ভস্ম হয়ে গিয়েছিল
ওই নৃশংস নররাক্ষসের সাম্রাজ্য।
মা নিজেদের জীবন বলিদান দিয়ে
ওরা তোর তিরঙ্গা আঁচল খেলিয়েছে
হাস্যরত সমস্ত পার্থিবের সামনে
সন্তানের উপহৃত ওই ১৫ই আগস্টে
তুই খুশি তো? ওদের তুই ভুলিস না।।

সৃজন বসু
সিভিল ইঞ্জিনিয়ারিং
দ্বিতীয় বর্ষ

প্রাণময় পূর্ণিমা

চন্দ্রিমার আজ একান্ত সাক্ষাৎ
সঙ্গে আমার মধুর কোলাজ।
চন্দ্রিমার এই রূপের সাক্ষী,
মনমোহে ডুবল আমার আঁখি।
শান্ত নিশি রাতে ঝিঁঝিঁর ডাক,
বর্ণনায় আমার শব্দ নির্বাক।
পূর্ণিমার সৌন্দর্য চন্দ্রের কোনায় কোনায়,
আমি গা ভাসাই সেই রূপের মোহনায়।

সৌরভ কুন্ডু
ইলেকট্রিক্যাল ইঞ্জিনিয়ারিং
তৃতীয় বর্ষ

নেহাত সকাল এখন

আলোর আকাশে জমে থাকা কালো মেঘ
নেহাত সকাল এখন
ভীড়ে ঠাসা প্রহরীর দল

মাঝে মাঝে সেই মেঘ থেকে চুঁয়ে চুঁয়ে রক্ত পড়ে
দেখা যায় না সে বিকৃতি।

মনের আড়ালে নিভে থাকা শয়তানের ক্ষুধা যেন
থেমেছে বছর কয়েক।
হিংস্রতা নয়;
এক কালো বিশ্বাস,
যা রূপ নেয় বর্তমান আর ভবিষ্যতে
এ এক ঘোর প্যাঁচ মস্তিষ্কের।
বার কয়েক আমারও বিকার আসে
যেন,
ক্ষুধাটা মেঘের বেঁচে ওঠার
মৃত হয় কত মূহুর্ত মানুষ ।।।।

ফিরে দেখা যায় সেই ছল
সেই পাশবিকতা

কিছুদিন হয়েছে মেঘ বেড়েছে আকাশে।
শুনেছি সেদিন চাঁদ হবে লাল
যখন কাছে আসবে কালরাত্রি।।।।

আমি এখন এক রাস্তায়,যার দুদিকে দুই আয়না
একদিকে কৃতজ্ঞতা
আমন্ত্রণ আরেক দিকে
আমার শরীর জুড়ে শুধু খিদে বোধ হয়।

নেহাত সকাল এখন
ভীড়ের ঠাসা শক্তিপুঞ্জ।

সৌম্যদীপ মুখোপাধ্যায়
ইলেকট্রনিক্স এন্ড কমিউনিকেশন ইঞ্জিনিয়ারিং
দ্বিতীয় বর্ষ

লকডাউন

দেখো আজ বিশ্বে এলো করোনা,
যার জেরে বিশ্বে এত যন্ত্রণা।
হচ্ছে দেখ ধ্বংস আজ মানব সভ্যতা,
ভগবান তুমিই ধরো আজ মানুষের হাতটা।
চারিদিকে ঘুরছে কত পশু প্রাণী,
তারা যেন বলে আজ আমাদের কিছু হবে না জানি।
দেখ আজ ধ্বংস মুখে বিশ্ব অর্থনীতি,
যার জন্য জার্মানি মন্ত্রী হলেন আত্মঘাতী।
ইতালি, স্পেন, আমেরিকা বড়ো বড়ো দেশের কপালে ভাঁজ,
মৃত দেহ কোথায় ফেলবে তারা খুঁজে পাচ্ছে না আজ।
তাইতো বলি সরকার কি বলছে শুনুন,
বাড়িতে থেকে, না হয় লকডাউন মেনে চলুন।।

পর্ণময় মোদক
কম্পিউটার সাইন্স এন্ড ইঞ্জিনিয়ারিং
প্রথম বর্ষ

শিক্ষক

বিশ্বপ্রাণের দন্ত লয়ে আছেন মহাজন,
উদারতার মূর্ত প্রতীক সে এক গুণীজন।
কাব্যরাশি তাহার মস্তিকে স্বচ্ছন্দে খেলে,
জীবন যেন তাঁর পিছে আত্মসুখে চলে।
মানবতারূপ প্রশ্বাস আর সততাময় প্রাণ,
সমভাবে জাগরিত করে শিক্ষাধর্মীর প্রাণ।
মর্মে ভাষা বোঝেন তিনি সকল শিক্ষার্থীর
বলেন, সদাই থাকো তোমাদের লক্ষ্যে স্থির।
নেতৃত্বদান করেন তিনি সকল শিক্ষার্থীকে ,
অভিযোজন করতে শেখান সবাইকে।
সর্বাঙ্গীন বিকশিত শিক্ষকের মন ,
ফুলে ফলে বিকশিত করে শিক্ষার্থীর মন।
বিজ্ঞান প্রযুক্তির সৃষ্টিধারা সদাই বয়ে যায় ,
শিক্ষার্থীর নতুনত্বের উদ্ভাবনের কর্ম ধারায়।
বিজ্ঞানময় ধর্ম তাঁহার আত্মায়স্থিত,
প্রকৃত শিক্ষার্থী গড়ে তোলা তাঁর জীবনামৃত।
সুখে দুখে হাসি মুখে লক্ষ্যে যিনি স্থির,
তিনিই শিক্ষক।
তাহার সদাই উন্নত শির ।।

অমিত কুমার বক্সী
ইলেকট্রনিক্স এন্ড কমিউনিকেশন
ইঞ্জিনিয়ারিং

হয়তো তুমি অন্য ধারার।।

তোমায় দেখলে কিছুটা নিজেকে যেন বুঝতে পারি।
যেমনটা ভিতরের ছবি,
খানিকটা তেমনি যেন,তোমার ছোট চুলের সেজে ওঠা।

নিজেকে বার কয়েক প্রশ্ন করাটা আমার অভ্যাস,
তোমায় দেখেও তো তাই,
প্রশ্নের উত্তরটা কিন্তু সদুত্তর-ই পেয়েছি সেবার।

আলোর আকাশে দুমুঠো রামধনু আমার চাহিদা,
আগের অন্ধকারের অতো জোর নেই যে
তোমার দিক চেয়ে বসে থাকে সারাটা দিন,
তাই পারি না।

পরিচয়টা পেলেও তোমায় জানাটা বাকি এখনো,
তবে তোমার ছোট বড় সবকিছু কিন্তু
বাহবা পাওয়ার মতো।

তোমার আঙ্গুলে নেল পলিশের দাগ নেই,
ঠোঁটে লাল রঙও ফুটে ওঠে না,
মনে হয় তোমার এসব ভালো লাগে না,
হয়তো তুমি অন্য ধারার।

আমি কিন্তু মানুষটা এই সবই খুঁজে এসেছি,
আর দেখো পেয়েও গেলাম।

অদ্ভুত কিন্তু এটা লাগে যে,তুমি কিছু বলো না।
বলোনা তোমার গোপন কষ্ট গুলো,
গোপন সেই দমবন্ধ করা অভিজ্ঞতা গুলো,

আর,তোমার চেয়ে বেশি ভালো?
সত্যি বলছি আমার চাই না,
আমি শুধু সেটাই চাই,
যেটুকু কারুর পছন্দের না।

সৌম্যদীপ মুখোপাধ্যায়
ইলেকট্রনিক্স এন্ড কমিউনিকেশন
ইঞ্জিনিয়ারিং
দ্বিতীয় বর্ষ

যৌথ পরিবার

ছেলেবেলার স্মৃতি - কতই মিষ্টি কতই মধুর,
হিংসা - বিদ্বেষের ঠিকানা তখন, ছিল যে বহুদূর।
যৌথ পরিবারের সদস্যা আমি, ছিলাম সবার আদরের,
সবার স্নেহ - ভালোবাসা ছিল খুবই দামী,
গুরুজনের শাসন ছিল সব থেকে বেশি কদরের।
দুষ্টুমি তে ছিলাম আমি সবার সেরা,
কারো হাতে দিতাম না যে ধরা,
দাদু - ঠাম্মিদের কাছে আমি যে ছিলাম চোখের মণি,
আজও মানি, আমি যে পৃথিবীতে সবচেয়ে বেশী ধনী।

সর্বকনিষ্ঠ সদস্যা হওয়ার দরুণ,
দিনগুলি মোর কেটেছিল প্রগাঢ় শাসনে,
অনুমতি ছিল না যাওয়ার,
বাড়ির বাইরে একলা কোনখানে।
কাঁদতাম তখন খুব,
কেন এত শাসনের বেড়াজাল আমার চারিদিকে?
আজ বুঝেছি, এ আর কিছু নয় - অন্ধ স্নেহ,
বাকি সবই তুচ্ছ, সবই ফিকে।
যখনই হত খুব শরীর খারাপ,
মা জাগতো সারারাত আমার পাশে বসে,
বাকীরাও করত মায়ের ভূমিকা পালন,যেন বলে দিত-
"আমরা আছি তো, আর তোমার চিন্তা কীসে!"

মন্দিরে দিতে যেত পূজা কেউ একজন,
বলত সবার নাম,
মানত করত যাতে পূরণ হয় সবার মনস্কাম।
যে কোনো অনুষ্ঠানে হতাম সবাই একসাথে,
হত হাসি-ঠাট্টা,সবে মিলে কাজ করতাম হাতে হাতে।।
আজও সেই স্মৃতি উজ্জ্বল মনের মণিকোঠায়,
দাদু-ঠাম্মিদের সাথে কাটানো সোনালী মুহূর্ত,,
কাকি-জেঠি-পিসীদের কত আদরের ছোঁয়ায়,
তারাই যে কখন হয়ে উঠবে মায়ের মতন,
কে তাহা জানত!!

কাকা ছিল আমার বাবার মতন,
শাসন ছিল, স্নেহ ছিল, ছিল অন্যায় আবদার,
বাবার ভয়ে পালিয়ে এসেছি, কাকার কাছে বারবার।
দাদু রোজ স্কুলে নিয়ে যেত,
লজেন্স কিনে দিত ফেরার পথে
দাদুর সাথে ঘুরেছি আমি কত জায়গায়,
সবাই মিলে গল্প করতাম একসাথে।

ভাই-বোনের সান্নিধ্য তেমনভাবে পাইনি কোনোদিন,
বছর চারেকের বড়,
ছোট পিসীই ছিল আমার খেলার সাথী,
ঝগড়া,মারামারী,খুনসুটি লেগে থাকত প্রতিদিন,
মা-ঠাম্মিকে আসতে হত ছুটে,
থামাতে আমাদের হাতাহাতি।

সেই ঝগড়াতেই মিশে ছিল ভালোবাসা,
মন খারাপ হলেই ছুটে যেতাম পিসীর কাছে,
কঠিন ছিল খুব সেই সঙ্গ ছেড়ে চলে আসা,
তবু গল্প শেষ করে তাড়াতাড়ি
পড়তে বসে যেতাম ভয়ে,
পাছে যদি নালিশ চলে যেত বাবার কাছে!

দুঃখ-আনন্দ, হাসি-কান্না, ঝগড়া-বিবাদ,
মানিয়ে নেওয়া
সবকিছু নিয়েই যৌথ পরিবার,
একই পথের পথিক হওয়া।
আজ আমি অষ্টাদশী, কলেজপড়ুয়া একটি মেয়ে,
চরম ব্যস্ততা, ব্যক্তিগত জীবনে আমার গেছে ছেয়ে।
পরিবারের সাথে তেমন ভাবে কাটাতে পারি না সময়,
কেন যে আমি বড় হয়ে গেলাম,
আজ আমার মনে হয়।

তবু আজও অমলিন সেই আদর, আবদার,
সেই ভালোবাসা,
এই পরিবারকে ঘিরে আমার
কোনোদিনও শেষ হবে না আশা।
আসব আমি ফিরে এই শিকড়ের টানে বারবার,
সুখে থাকুক, বেঁচে থাকুক, আমার যৌথ পরিবার।।
।।সমাপ্ত।।

শ্রুতিলেখা জানা
সিভিল ইঞ্জিনিয়ারিং
প্রথম বর্ষ


কথা
ও
কাহিনী

আত্মাকথা

সৃজন বসু / সিভিল ইঞ্জিনিয়ারিং / তৃতীয় বর্ষ

সব রহস্যের সমাধান হয় না...হতে পারে না। এ প্রাচীন বিশ্বের প্রতিটি ঘটনা পূর্বনির্ধারিত...আমি বা আপনারা না থাকলে কালের চক্রে তা ঘটতই। বহুবার বিশ্বে প্রলয়কারি বিপর্যয় ঘটে গেছে, জনশূন্য হয়ে গেছে নগর, জনপথ, মনুষ্যবসতি। তাও কি মানুষ থেমে গেছে?? না থামেনি নিরন্তর লড়াই করে যাচ্ছে প্রকৃতির ধ্বংসাত্মক রূপের বিরুদ্ধে, রহস্যের বিরুদ্ধে...বিজ্ঞান দিয়ে, যুক্তি দিয়ে, তার দীর্ঘদিনের গবেষণা দিয়ে। আজ আমি একটু বিজ্ঞান,যুক্তি আর আমার কল্পনা কে কাজে লাগিয়ে প্রকৃতির একটা দুর্ধর্ষ রহস্যের সমাধানের চেষ্টা করি...আমি জানি না আমার theory কতটা ঠিক বা ভুল..এটি আমার কল্পনার একটি ছোট্ট লেখনী মাত্র।

আমাদের শাস্ত্র বলে আত্মা অবিনশ্বর, আত্মার সৃষ্টি নেই আত্মার ধ্বংস নেই, আত্মা অমর, আত্মা কেবল দেহের মৃত্যুর পর এক শরীর থেকে অন্য শরীরে স্থানান্তরিত হয়, এই বিষয়টাকে আমি আমার একটু আলাদা দৃষ্টিকোন দিয়ে অল্প বিজ্ঞানের সাহায্য নিয়ে একটু আলাদা ভাবে বিশ্লেষণ করার চেষ্টা করলাম।

আমি ধরলাম একটি মানুষের মৃত্যু হয়েছে, সেই মানুষের আত্মা এখন মুক্ত, শাস্ত্র মতে সে এখন দেহ পরিবর্তন করতে পারবে, কিন্তু প্রশ্ন আমার অন্য জায়গায়, আত্মা জীবন দশার কোন পর্যায় অন্য শরীরে প্রবেশ করবে ? যখন শিশু মাতৃ গর্ভে থাকবে ? কিন্তু তা কী করে সম্ভব ? মাতৃ গর্ভে শিশুর মধ্যে আত্মা স্থাপনের আগে আত্মা কে আগে মাতৃ শরীরে প্রবেশ করতে হবে, কিন্তু মাতৃ শরীরে তো আগে থেকেই অন্য আত্মা বর্তমান....তাহলে আত্মা শরীর পরিবর্তন করছে কীকরে? আমার মতে, মাতৃ আত্মা সত্বার কিছু ভাগ সন্তানের দেহে স্থাপিত হয়, এই ভাবে কন্যা সন্তান হলে সে এই সত্বাকে অসীম সময়কাল ধরে জীবিত রাখতে পারে, এবার প্রশ্ন হলো পুরুষরা তো গর্ভে শিশু ধারণ করতে পারে না, তাহলে তাদের মৃত্যুর পর সেই আত্মার কি হয়? আমরা জানি উদ্ভিদ বা প্রাণীর বেঁচে থাকার জন্য দরকার হয় নির্দিষ্ট পরিমাণ রসদ, এবার একটু চিন্তা করলে বোঝা যায় শরীরের মধ্যেও আত্মার বিকাশ হয়, আত্মার বিকাশের রসদ আর আমাদের রসদ কোনো ভাবেই এক হতে পারে না, তাহলে আত্মা রসদ কোথা থেকে জোগাড় করে? আত্মার রসদ জোগাড় করে অন্য আত্মা থেকে, বিজ্ঞান তথা শাস্ত্র বলছে, আত্মা এক প্রকারের শক্তি, আমার মতে মানুষের মৃত্যুর পর এই আত্মা তার সম্পূর্ণ শক্তি ত্যাগ করে, এই বায়ুমণ্ডলে, এবং এই উর্জা থেকেই বিকাশিত হয় জীবিত মানবশরীরের আত্মারা, যা এদের রসদ এর সমান, আমরা যদি ভালো করে ভেবে দেখি আত্মার যে মোট শক্তির পরিমাণ তা কিন্তু ধ্রুবক থাকছে একটি চক্রাকার পথে, বিজ্ঞান তো আগেই বলেছে, এই বিশ্বব্রহ্মান্ডের মোট শক্তির পরিমাণ ধ্রুবক।

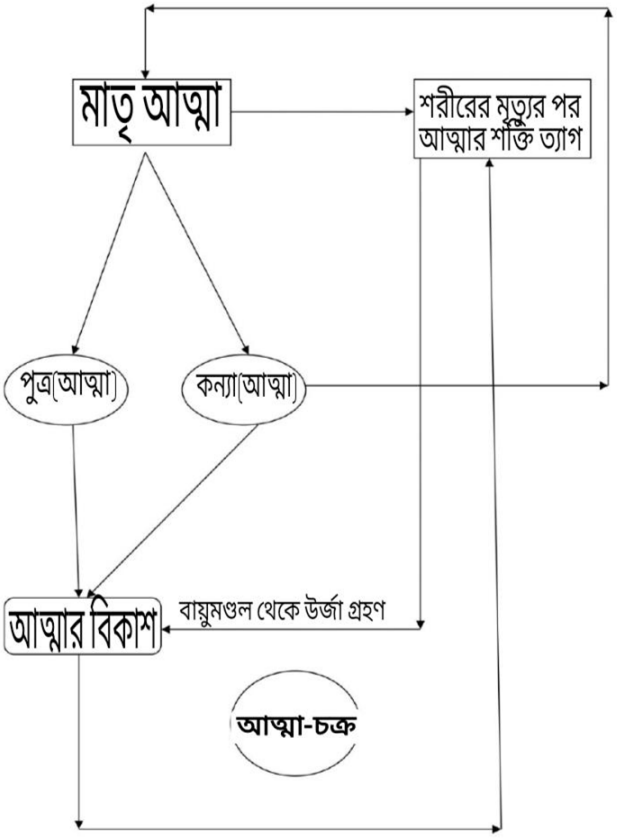
আর একটু সরল করে এই বিষয় টার উপর আলোকপাত করার চেষ্টা করছি জানিনা কতটা সফল হবো.

- প্রথম অবস্থায়

ধরা যাক একজন মায়ের কন্যা সন্তান হয়েছে। তো সে ক্ষেত্রে মাতৃ আত্মার কিছু অংশ কন্যা সন্তানের দেহে স্থাপিত হলো... ও সময়ের সাপেক্ষে সে বায়ুমণ্ডল থেকে উর্জা (অন্য আত্মাদের ত্যাগ করা শক্তি) গ্রহণ করে বিকশিত হলো। এই বার পরবর্তী কালে সেই কন্যা যখন মাতৃত্ব লাভ করবে অর্থাৎ সে মা হবে তখন তার সন্তানের দেহেও তার আত্মার সত্ত্বা স্থাপিত হবে এবং সেই সত্ত্বার কিছু ক্ষুদ্র অংশ কিন্তু প্রথম মায়েরও থাকবে...এই ভাবে কন্যা সন্তানেরা এই স্বত্তাকে অসীম সময় পর্যন্ত বংশে জীবিত রাখতে পারে।এবং কন্যার মৃত্যুর পর সেই আত্মা আবার বায়ুমণ্ডলে ফিরে এসে শক্তি ত্যাগ করবে ও শক্তির সংরক্ষণ মেনে চলবে।

- দ্বিতীয় অবস্থা

এবার ধরা যাক সেই মায়ের পুত্র সন্তান হয়েছে। একই ভাবে মায়ের আত্মা সত্ত্বার কিছু অংশ পুত্রের দেহে স্থাপিত হবে। সময়ের সাপেক্ষে সেই আত্মা বাতাস থেকে শক্তি গ্রহণ করে বিকশিত হবে..এবং অবশেষে দেহের মৃত্যুর পর তা আবার বায়ুমণ্ডল-এ ফিরে এসে শক্তি চক্রের চাকার ভারসাম্য বজায় রাখবে। এবার প্রশ্ন এলো যে কন্যা দের মত পুত্ররা কি মাতৃ আত্মার সত্ত্বা কে বংশানুক্রমে জীবিত রাখতে পারে না...?? এর উত্তর হলো না!! কারণ পুরুষেরা গর্ভধারণে অক্ষম।



অনেক প্যারানরমাল এক্সপার্টরা বলেন, কোনো স্থানে আত্মার উপস্থিতি হলে সেই জায়গার উষ্ণতা হটাৎ করে কমে যায়, এবং সেই স্থান এর ম্যাগনেটিক ফিল্ডের (চৌম্বক ক্ষেত্র) খুব তাড়াতাড়ি পরিবর্তন শুরু হয়, চলুন এই ব্যাপার টাকে আমি একটু ব্যাখ্যা করার চেষ্টা করি আমার বৈজ্ঞানিক দৃষ্টিকোন দিয়ে।

আপনারা লক্ষ্য করবেন, প্যারানরমাল এক্সপার্টরা এসব উপদ্রপ লক্ষ্য করেন বেশিরভাগ ভাবে কোনো পরিত্যক্ত স্থানে, এবার একটু ভাবুন, একটু আগে যেই চক্রের কথা আমি বললাম সেটা পরিপূর্ণ করার জন্য আত্মা কে তার শক্তি ত্যাগ করতে হবে এবং সেই শক্তিকে বিকাশের জন্য ব্যবহার করবে অন্য আত্মারা, কোনো পরিত্যক্ত স্থানে লোকসমাগম কম থাকে, এবং ভুতুড়ে স্থান হিসাবে পরিচিত হলে তো কোনো কথাই নেই, যেসব মানুষের আত্মারা ওই স্থানে শক্তি ত্যাগ করেছে, সেই শক্তিকে কাজে লাগানোর মত আত্মার ঘাটতি ঘটে সেখানে, এই কারণে সেই সব স্থানে যখন কোনো মানুষ যায় তখন তার আত্মা ব্যকুল হয়ে ওঠে সেই দীর্ঘদিন ধরে সঞ্চিত প্রবল শক্তিকে অনুভব করার জন্য, এই জন্য সেই মানুষের মন ও ব্যাকুল হয়ে ওঠে এবং তার মন ভরে যায় কোনো অজানা আতঙ্কে, সেই জমে থাকা শক্তি শীঘ্রই মুক্ত হতে চায়, এই কারণেই সেই স্থানের উষ্ণতা তাৎক্ষণিক ভাবে কমতে থাকে, বিজ্ঞানের Thermodynamics চ্যাপ্টার বলছে অধিক শক্তি স্থিতিশীল না, তাই এ ক্ষেত্রেও বিজ্ঞান সঠিক প্রমাণিত হলো, আমরা এইসব স্থানের যদি এনার্জি লেভেল measure করি তাহলে আমার ধারণা তা অবশ্যই তুলনা মূলক ভাবে বেশি হবে অন্য স্থানের থেকে, যেহেতু আগেই বলেছি ইহা একপ্রকার শক্তি মাত্র, বাকি পড়ে থাকলো চৌম্বক ক্ষেত্র পরিবর্তন এর ব্যাপারটা,সেটাও বিজ্ঞান এর দৃষ্টিতে দেখলে হয়তো সম্ভব, কারণ আমার মতে যেই স্থানে আকস্মিক শক্তির দ্রুত পরিবর্তন হচ্ছে সেই স্থানে, চৌম্বক ক্ষেত্রের পরিবর্তন অস্বাভাবিক না।

এইটুকুই ছিল আমার ছোট্ট ধারণা, এই ধারণা সম্পূর্ণ আমার ব্যাক্তিগত ভাবনা চিন্তার উপর ভিত্তি করে যা ভুল হওয়াও অস্বাভাবিক কিছু না...

অগ্নি-সংহার

সৃজন বসু / সিভিল ইঞ্জিনিয়ারিং / তৃতীয় বর্ষ

প্রায় দু-বছর পরে কাল আবার কলেজ খুলছে। আবার বন্ধুদের সঙ্গে দেখা হবে। আবার শ্রেণী কক্ষগুলো মুখরিত হয়ে উঠবে ছাত্র ছাত্রীদের কলতানে, ভাবতেই যেন রোমাঞ্চ হচ্ছে।এতদিন ধরে যান্ত্রিক কম্পিউটার কিংবা ল্যাপটপের মায়াপর্দার ওপারে বসে থাকা বন্ধুদের সাথে অনেক কথা, অনেক খুনসুটি হলেও এই প্রথমবার তাদের সাথে সামনা সামনি দেখা হবে। পরদিন কলেজ গেলাম,পরিচয় হল অনেক বন্ধুর সাথে যাদের মুখ আমি দেখেছি অনলাইন ক্লাসের সময় আমার মোবাইলের স্ক্রিনে। তার মধ্যে সিদ্ধার্থও ছিল যার সাথে আমার বন্ধুত্ব সবচাইতে বেশি ছিল। কলেজ শেষে অনেক জোড়াজুড়ি করে সে তার বাড়িতে নিয়ে গেলো আমায়। সেখানে তার বাবা,মায়ের সাথে আলাপ হল। তার বাবা খুবই ভালো মানুষ, অনেক গল্প করলেন সেদিন। আমাদের বন্ধুত্বের প্রশংসা করতে গিয়ে তিনি তাঁর জীবনের এক ভয়ঙ্কর অভিজ্ঞতার কথা শোনালেন,যা সিদ্ধার্থও আগে কোনোদিন শোনেনি তার বাবার থেকে। তাঁর মুখের শোনা গল্পটা তাঁরই ভাষায় আমি বিবৃত করছি আপনাদের কাছে। একদিন কলেজ স্ট্রিট থেকে বই কিনছিলাম, হঠাৎই আমার কাঁধে এসে পড়লো একটা ভারী হাত। পিছু ফিরে দেখলাম সত্যকাম!! আমি কিছুটা হতভম্ব হলাম তারপর আনন্দের সাথে বললাম," ভাই তুই? এখানে?" সত্যকাম বলল," হ্যাঁ ভাই একটা কাজে এসেছি আজই বর্ধমান ফিরে যাব, তারপর বল কেমন আছিস? "আমি বললাম "কতদিন পর দেখা তোর সাথে, বাড়ি চল,আজ জমিয়ে আড্ডা মারবো।" সত্যকামের হাসিটা একটু ম্লান হয়ে গেলো।আমি বললাম "কিরে গম্ভীর হয়ে গেলি কেন তুই?" সত্য বললো, "ও কিছু না...চল।" কথায় কথায় আমি সত্যকে জিজ্ঞেস করলাম, "এখন তাহলে কি করিস?? হিন্দু মাইথোলজি, তন্ত্র-মন্ত্র, এই সবের ভূত গুলো মাথা থেকে নেমেছে?" সত্য হেসে বললো," ভূত তো তাড়ানোর চেষ্টাই করিনি ভাই..নামবে কীকরে?" কথাবার্তার মাঝে হঠাৎ সত্য একটু অন্যমনস্ক হয়ে পড়ছিল, সেটা দেখে আমি বললাম, "তোর কি হয়েছে বলতো?" একটু ভ্রু-যুগল কুঁচকে সত্য বললো "তোর সামনে আসন্ন বিপদ ভাই, আমি অনেক্ষন ধরে লক্ষ করছি এক জোড়া কাক তোর দিকে এক নাগাড়ে তাকিয়ে আছে, আর তখনও দেখলাম তোর ছায়ার পাশে একটা খুব ক্ষীণ ধূসর একটা আবরণ। এগুলো ভালো লক্ষণ না,খুব বিপদ সামনে তোর। আমায় তোর বাড়িতে যেতেই হবে। "সত্যর কথা শুনে তো আমার চোখ ছানাবড়া... আমি এবার বললাম, "কি আলফাল বকছিস ভাই, এই জন্য বলি ওইসব ফালতু তন্ত্র-মন্ত্র নিয়ে এত নাড়াঘাঁটা করিস না, মাথাটা তো পুরো খারাপ হয়ে গেছে।" সত্যকাম খুব শান্ত গলায় বললো,"কি? বিশ্বাস হচ্ছে না তো? দাঁড়া।"এই বলে সে তার কাঁধে ঝোলানো ব্যাগটা থেকে একটা লাল সুতো বের করলো, আর বললো, "এই সুতোটা আমি তোর হাতে বাঁধতেই দেখবি কাক গুলো উড়ে যাবে, আমি বাঁধছি তুই কাকগুলোর দিকে লক্ষ্য রাখ।" এই সময় কাক দুটো কর্কশ শব্দে ডেকে উঠলো, আর সুতো বাঁধা মাত্রই কাক দুটো উড়ে গেলো। সত্য বললো," অবাক হওয়ার কিছু নেই,এটি দেবীর পুজোর একটি সামান্য সুত মাত্র, কারোর ক্ষমতা নেই মা কল্যাণময়ীর সন্তানের উপর কু-দৃষ্টি দেয়। চল এবার চটপট আমায় নিয়ে চল, তোদের বাড়িতে।" বাড়ি ঢোকার মুখে, সত্যকাম থমকে গেলো দরজার মুখে। সত্য আমাকে বললো,"হ্যাঁরে খই কোথা থেকে এলো?" আমি দেখলাম সত্যি অনেক খই পরে রয়েছে আর পাশের গাছে সেই দুটো কাক বসে।আমি সত্যকে সবার সাথে পরিচয় করিয়ে দেওয়ার পর তার কথা মতই মাকে জিজ্ঞেস করতে গেলাম খইয়ের ব্যাপারটা, কিন্তু মা খই নিয়ে কিছু সঠিক তথ্য দিতে পারলেন না, তিনি বললেন তিনি তো আগে দেখেননি খই পড়ে দরজার মুখে।সত্য আমাকে ডেকে বলল, " ভাই তোদের বাড়িতে প্রবেশের পরেই একটা অদ্ভুত অনুভূতি হয়েছে আমার, এ আমার জন্মগত একটি ঐশ্বরিক ক্ষমতা।আমার হাতে বেশি সময় নেই আমি আজ রাতে ধ্যানযোগে বসবো, এই বাড়ির প্রাচীন ইতিহাস আমার জানা খুব দরকার। " পরেরদিন সকালে আমি, মা আর বাবা সবাই অধীর আগ্রহে অপেক্ষা করছিলাম, সত্যের জন্য, আমি বাবা মাকে সব বলে রেখেছিলাম সত্যের কথা। ঘর থেকে বেরিয়ে এলো সত্য, তার মুখে বিন্দু বিন্দু ঘাম, চক্ষু বিস্ফারিত, যেনো ঠিকরে বেরিয়ে আসতে চায় সেগুলো। সে এসে বলল, " এক প্রাচীন অভিশাপের করাল গ্রাস আবার নেমে আসতে চলেছে আপনাদের পরিবারে। আমাকে সে বললো,"আমায় তোদের বাড়ির উত্তর - পশ্চিমে যে ঘরটি আছে ওটায় নিয়ে চল, প্রশ্ন করবি না বেশি, যে কীকরে জানলাম, কি জানলাম শুধু নিয়ে চল।" আমি সত্যকে নিয়ে গেলাম, সেই ঘরে,দরজায় একটি মরচে পরা তালা, আর পাশে লেখা ছিল আমাদের বংশের কোনো উত্তরসূরী এই তালা যেনো না খোলে, সত্য একটা শাবল জোগাড় করে তালাটায় একটি সজোরে আঘাত করলো, আর সাথে সাথেই

তালাটা ভেঙে দিয়ে দরজাটা ক্যাঁচ-কূচ শব্দে খুলে গেলো, ঘর ফাঁকা, শুধু মেঝেতে আঁকা একটি আশ্চর্য চিত্র, সেটা দেখেই সত্য মাটিতে বসে পড়লো, মাথায় হাত দিয়ে...আর বললো," হা ঈশ্বর!!" সত্য এরপর মূল ঘটনার ব্যাখ্যা দিতে শুরু করলো, "এই বংশের এক মর্মান্তিক নিষ্ঠুর ইতিহাস আছে, এই বংশের দূর্দন্ড প্রতাপ জমিদার রুদ্রপ্রতাপ রায়, তাদের তৎকালীন জমিদার শত্রু ভট্টাচার্য পরিবারকে নাশ করার জন্য, দেবী ধুমাবতির আরাধনা করেছিলেন, একটু আগে যেই চিত্র দেখলেন, সেটি দেবীর যন্ত্র। এনি কোনো সাধারণ দেবী না, হিন্দু তন্ত্রে দশমহাবিদ্যার, সপ্তম মহাবিদ্যা ধূমাবতী। স্বয়ং মহাকাল দেবীকে অভিশাপ দিয়েছিলেন যে তিনি কোন গৃহস্থবাড়িতে পূজিত হবেন না কিন্তু জমিদার মশাই দেবীকে এই বাড়িতে প্রতিষ্ঠা করেছিলেন এবং এই দেবীর পূজার আগে দেবী দক্ষিনা কালীর আরাধনা করতে হয় না হলে দেবীর ক্রোধের আগুনে আরাধকের সর্বনাশ উপস্থিত হয়, তৎকালীন কুলপুরহিত অতীন্দ্রচর্য এই দুটি নিয়ম অমান্য করে দেবীর পূজা করেন, এবং সাময়িক সময়ের জন্য ভট্টাচার্য পরিবারের সম্ভবত সকল সদস্যের মৃত্যু হয়, কিন্তু বিপদ আসে অন্য দিক দিয়ে, দেবী দক্ষিণা কালীর অভিশাপ বর্ষিত হয় এই বংশে, এবং প্রতি দুই পুরুষ অন্তর এই বংশে ঘটে চলছে এক মৃত্যুলীলা আপনারা জানেন কিন্তু আপনাদের কিছু মনে থাকবে না কারণ আপনারা, দেবী ধূমাবতীর বশীভূত, আর আপনারা হয়তো জানেন দেবী ধূমাবতীর বাহন হল কাক এবং তিনি একটি কুলোয় করে খই ছড়ান, বাকিটা আপনারা বুঝতে পারছেন নিশ্চই। প্রতি দুই পুরুষ অন্তর এই বংশে বৃশ্চিক রাশিতে জন্ম নেওয়া পুরুষদের মৃত্যু হয়, অকল্পনীয় ভাবে পুড়ে গিয়ে। আর এই পোড়া কোনো সাধারণ পোড়া নয়, স্বয়ং দেবী দক্ষিণা কালীর সেবক অগ্নিবেতাল আসে সেই কাজ সম্পন্ন করতে, এই অগ্নিবেতাল সব থেকে উচ্চ পর্যায়ের ক্রুর অপশক্তি, স্বয়ং পবিত্র অগ্নিদেব তার করায়ত্ত, কাল অমাবস্যা, কাল সে আসবে আবার, আর আপনাদের ছেলে অর্থাৎ আমার বন্ধুর রাশিও বৃশ্চিক। এই অগ্নিবেতালকে একবার বাধা দিতে পারলেই সব শেষ, শাপ মুক্ত হবে এই পরিবার।" এতটা এক নাগারে বলে থামলো সত্য, বাকিদের কপাল ঘামে ভিজে গেছে, সত্য বললো," আমি আমার শেষ চেষ্টা করবো,তোর আমি ক্ষতি হতে দেব না, বন্ধুত্বের ভালোবাসার কাছে ঝুঁকতে হবে দেবীর সেবককে, আমি কথা দিলাম।" একটা কাগজে কিছু একটা লিখে সত্য আমার হাতে সেটা ধরিয়ে দিয়ে বলল," আমি যখন চলে যাব তখন এটা খুলে পড়িস তার আগে এটা খুলবি না অনর্থ হয়ে যাবে।"এই বলে সত্য সেখান থেকে চলে গেলো।পরদিন অমাবস্যার রাত। চারদিক শান্ত, হঠাৎ করে একটা কাক ডেকে উঠলো কা-কা শব্দে,বায়ুর বেগ বেড়ে গেলো, বাতাসের উষ্ণতা এক ঝটকায় বেড়ে গেলো। সত্য আমাকে একটি ঘরে বসিয়ে দেবীর নাম স্মরণ করতে বলেছিল একনাগাড়ে, এবার হঠাৎ দরজার পাল্লা লাল আগুনের ঝলকায় পুড়ে গিয়ে খুলে পড়ল, বেতাল আবির্ভূত হয়েছে, আর তার সামনে পথ আটকে দাড়িয়ে আছে, সত্য..সত্যকাম, তার মুখে শোনা যাচ্ছে দুর্বোধ্য ভাষায় মন্ত্রচারণ, গম্ভীর গলায় সে বলে উঠলো

"প্রবিষ্টে যদ্ বিদেহায়াৎ, তদ্আবিষ্টে বন্ধনম
দ্বারবন্ধম ইদম কৃত্যাঃ, তন্ত্রাচারঃ ইথ্যঃ সমাপয়াৎ।"

অগ্নিবেতাল আবদ্ধ হয়েছে মন্ত্রের এক অজানা মায়াজালে, সে এগোতে পারছে না, প্রচন্ড হুংকার ছেড়ে সে মিলিয়ে গেলো বাতাসে, সত্য বুঝলো অভিশাপ খণ্ডিত হয়েছে, সত্য কিছু না জানিয়ে বেরিয়ে গেলো বাড়ি থেকে,সেই শেষ দেখা তার সাথে আমার, আর তাকে দেখতে পেলাম না।এবার সেই কাগজের কথা মনে পড়লো আমার, আর সেটা পরে মুহূর্তের মধ্যে মাটিতে বসে পড়লাম আমি কপালে হাত দিয়ে। তাতে লেখা, ভট্টাচার্য জমিদার বংশের একজন মেয়ে বেচেঁ গিয়েছিল দেবীর প্রকোপ থেকে, সেই মায়ের সন্তান আমি, পিতৃ পরিচয় জানিনা আমি তাই আমার নাম সত্যকাম, এই অভিশাপের খন্ডন একমাত্র ভট্টাচার্য পরিবারের উত্তরসূরি পক্ষে সম্ভব ছিল, আর মৃত্যুকে আটকানো যায় না মৃত্যুর দিক পরিবর্তন করা যায়, হঠাৎ বাতাসে সেই কাকের কর্কশ শব্দ শোনা গেলো, আর বাতাসে ভেসে এলো একটা মিষ্টি গন্ধ, এ গন্ধ মৃত্যুর।

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কন্ঠহীন সুরজগত

শুভদীপ দাস / ইলেকট্রিক্যাল ইঞ্জিনিয়ারিং / তৃতীয় বর্ষ

ইতিহাসের পাতায় কিছু সময় লেখা থাকে স্বর্ণাক্ষরে। আবার কিছু সময় উল্লেখিত হয় কালো সময় হিসেবে। আমরা যেন এখন সেরকমই একটা সময়ের মধ্যে দিয়ে যাচ্ছি।

২০২২ এর ফেব্রুয়ারী মাস যেন এক অভিশপ্ত সময়। দু সপ্তাহের মধ্যে আমরা হারালাম সঙ্গীত জগতের উজ্জ্বলতম তিনটি নক্ষত্র, যারা তারাদের দেশে গিয়ে যেন আরো উজ্জ্বল হয়ে উঠেছেন।

এই সেদিন ৬ই ফেব্রুয়ারী, সরস্বতী পূজার পরের দিন, বসন্ত পঞ্চমী তিথি পার হয়ে বাড়িতে বাড়িতে, পাড়ায় পাড়ায় কাঁসর ঘন্টা বাজছে। মা সরস্বতীর বিদায় উপস্থিত। এমন সময় সারা দেশে নেমে এলো শোকাবহ। সরস্বতীর বরকন্যা বিদায় নিয়েছেন তার মা এর সাথে।

সেদিন সেই ব্যক্তিত্বকে স্বর্গে স্বাগত জানিয়ে ছিলেন যেন স্বয়ং দেবতাগণ। ভারতবর্ষে তথা সমগ্র বিশ্বের অন্যতম একজনকে চোখের জলে বিদায় দিয়ে ভারতবাসী তখন ভারাক্রান্ত, হৃদয়ে সৃষ্টি হয়েছে এক দগদগে ক্ষত।

সুর সম্রাজ্ঞী লতা মঙ্গেশকরের জীবনাবসানের খবর হয়তো পৌঁছেছিল গীতশ্রী সন্ধ্যা মুখোপাধ্যায়ের কাছেও। মাত্র ৯ দিনের মধ্যে, ভারতবাসীর হৃদয়ের দগদগে ঘা শুকাতে না শুকাতে যেন সেই ক্ষত আরও গভীর হল। বিদায় নিলেন গীতশ্রী। বাংলা সঙ্গীত জগতের স্বর্ণযুগের আরও একজন বিশিষ্ট গায়িকা চলে গেলেন আমাদের ছেড়ে।

খবরটায় হঠাৎ স্তব্ধ হয়েযায় শিল্পী জগত। লতাজীর মৃত্যুর কথা ঠিক মতো মানিয়ে নেওয়ার আগেই আবার দুঃসংবাদ। কিন্তু ভাগ্যের কি পরিহাস। অদৃষ্ট যেন তখন আড়াল থেকে বলছেন দাঁড়াও এখনো বাকি।

সন্ধ্যা মুখোপাধ্যায়ের মৃত্যুর ২৪ ঘন্টা কাটতে না কাটতেই আবারও নক্ষত্রপতন। মারা গেলেন সুরকার বাপ্পী লাহিড়ী। শেষ হলো ভারতীয় সঙ্গীতের এক অভূতপূর্ব অধ্যায়। ভারতীয় সঙ্গীত জগতের তিন উজ্জ্বল নক্ষত্র পাড়ি দিলেন তারাদের দেশে। এ যেন এক কঠিন সময়। সঙ্গীতের ছাদ যেন সরে গেল এক নিমেষে। যেখানেই থাকবেন ভালো থাকবেন। আপনাদের প্রতি শ্রদ্ধা জানিয়ে আমার এই ছোট্ট উপস্থাপনা।

শেষ করার আগে বলতেই হবে -

“ এ শুধু গানের দিনে ইয়াদ্ আ রাহা হ্যায় জিন্দেগী প্যায়ার কা গীত হ্যায়"

মা

সৌরভ কুন্ডু / ইলেকট্রিক্যাল ইঞ্জিনিয়ারিং / তৃতীয় বর্ষ

~ অনেক বয়স হয়েছে।
~ আমার ওষুধ টা ফুরিয়ে গেছে একটু এনে দিবি বাবা!
~ কাল থেকে মাথাটা কেমন করছে, শরীরটাও কিছু দিন ধরে ঠিক নেই। গা-হাত পা ব্যাথা, মনটাও খুব অস্থির। তোর বাবাও অনেক দিন আগে চলে গেছেন। তুই ছাড়া এখন আমার আর কেউ নেই। তুই যদি একটু ওষুধ টা এনে দিস খুব ভালো হয়।
~~ না মা এখন আমি যেতে পারব না। তোমার বৌমা আজ বাপের বাড়ি যাবে। ওকে পৌঁছে দিয়ে আসতে হবে।
~ তা বাবা আমার ওষুধ টা একটু এনে দিয়ে তারপর না হয়দিয়ে আসিস।
~~ না পারব না, এখন আমার সময় নেই। তুমি চুপ করো এখন। কাউকে বলে দাও, এনে দেবে। আর না হলে একদিন ওষুধ না খেলে কিছু হবে না।
~ দে না বাবা এনে। আমি পারছি না, একদিন না খেলে আমি আর বাঁচব না।
~~ তুমি এখন থামো। আমি পারব না এখন। কানের মাথা খেও না তো।
~ তোর কাছে এখন বৌকে বাপের বাড়ি দিয়ে আসা টা বেশি গুরুত্বপূর্ণ হয়ে দাঁড়ালো। তোর মায়ের শরীর খারাপের কোনো গুরুত্ব নেই।
~~ মা, এখন এইসব বলে মাথা খারাপ করো না তো। নাটক কোরো না। এমন কিছুই হয়নি। আমি বেরোলাম। কাল ফিরব। আসার আগে ওষুধ নিয়ে আসব।
~ না বাবা এইভাবে মুখ ফিরিয়ে অসুস্থ মা কে রেখে চলে যাস না। পরে চাইলেও আর ফিরে পাবি না মা।
~~ ধুর, চুপ কর তো আর নাটক কোরো না। আমি চললাম। এখন তুমি এত পরিমাণে বিরক্ত কর যে তোমাকে বৃদ্ধাশ্রমে রেখে আসব।

~~~ পরের দিন ছেলে বাড়ি ফিরে দেখে বাড়ির চারপাশে পাড়ার লোকেরা ঘিরে বসে আছে।
~~ কি হয়েছে, এইভাবে আপনারা বাড়ির চারপাশে ঘিরে বসে আছেন কেন? কি হয়েছে?
সরে যান একটু দেখি। আমি ঘরে ঢুকবে।
সরুন সরুন দেখি কি হয়েছে।
~~~ ঘরে ঢুকে ছেলে দেখে ঘরের বারান্দায় সাদা রঙের কাপড়েমোড়া একটা কিছু ঢাকা রাখা আছে। কাপড়টাসড়াতেই, চোখের সামনে এল এক পাথরের মতো নিথর দেহ পড়ে আছে।
কেমন যেন চেনাচেনা লাগছে? কিছুক্ষণ ছেলে হুশ চলে গিয়েছিল।
~~ হঠাৎ বলে উঠল, ইনি কে? কেমন যেন চেনাচেনা লাগছে? খুব কাছের কেউ মনে হচ্ছে, দয়া করে কেউ বলুন না ইনি কে?
~~~~ এনি তোমার মা। আজ সকালে জন্ডিসে মারা গেছে।
ডাক্তার বাবু বলেছেন, জন্ডিসে শরীর অবশ হয়ে গিয়েছিল। পর্যাপ্ত সময়ে ওষুধ না পড়ায় মারা গেছেন। অনেক দেরি হয়ে গেছে।
~~~ ছেলে পাথরের মতো নিথর। মুখে কথা নেই।
যদিও মুখে কথা না থাকারই কথা।।।।

सृजन

पूनम अंधियारी !

मैंने दोस्त से कहा-"दोस्त,
तू भी अजीब किस्मत का हेठा है|
जो पूनम के प्रकाश में
नन्हा सा दीप जलाए बैठा है?
पगले, शरद पूनम की
सुखद, सुहानी , सुंदर, शुभ्र रात है|
मानव प्राणी को मिली
प्रकृति की यह अद्भुत सौगात है|
देखो, चारों तरफ फैला
निर्मल, धवल, स्वच्छ, शुभ्र
प्रकाश है|
फिर तू जाने क्यों
गुमसुम है,
दु:खी है और उदास है?
और उस पर तूने
एक नन्हा सा दीप जला रखा है|
लगता है कि तुझे
प्रकाश आनन्द अर्थ नहीं पता है? "
वह बोला-"खुशी है,
तू प्रकाश सुख-स्वाद चखता है|
परन्तु दु:ख है, तुझे
अराजक- अंधेरा नहीं दिखता है|
आंख खोलकर देख
ये कोई किस्सा-कहानी नहीं है|
दूध दही को छोड़
गाँव में पीने का पानी नहीं है|
जबकि कुछ लोग
छककर शराब का आनंद लेते हैं|
अपनी मद मस्ती में
फुटपाथ मजदूर कुचल देते हैं|
धन कुबेरों के लिए
सुख सुविधाओं का सारा सामान है|
जबकि निर्धन के पास
न रोटी, न कपड़ा है, न मकान है|
कुछ गिने चुने लोग
सुख-सुविधा प्रकाश को जी रहे हैं|
जबकि अधिकांश अन्धेरे की
अराजकता के आसु पी रहे हैं|
सुनकर, देख-समझकर,
मन दु:खता है, तबीयत घबराती है|
पूनम धवल प्रकाश को
अराजकता अमावस लील जाती है|
तू चाहे जितना कह ले,
मैं अजीब हूँ,
किस्मत का हेठा हूँ!
पर मैं
अराजकता
अमावस से
सन्घर्ष का,
दीप जलाए बैठा हूँ!! "

रिशु मिश्रा
कंप्यूटर साइंस एंड इंजीनियरिंग
प्रथम वर्ष

हिमालय

हिमराज है खड़ा हिमालय,
पर्वत का जो राजा है।
उत्तर से लेकर पूवर् तक,
साम्राज्य ये निराला है।।१।।

हिमाचल से अरुणाचल तक,
इसकी सीमा जाती है।
पशुपति के चरणों मे,
ये सुंदर घाटी आती है।।२।।

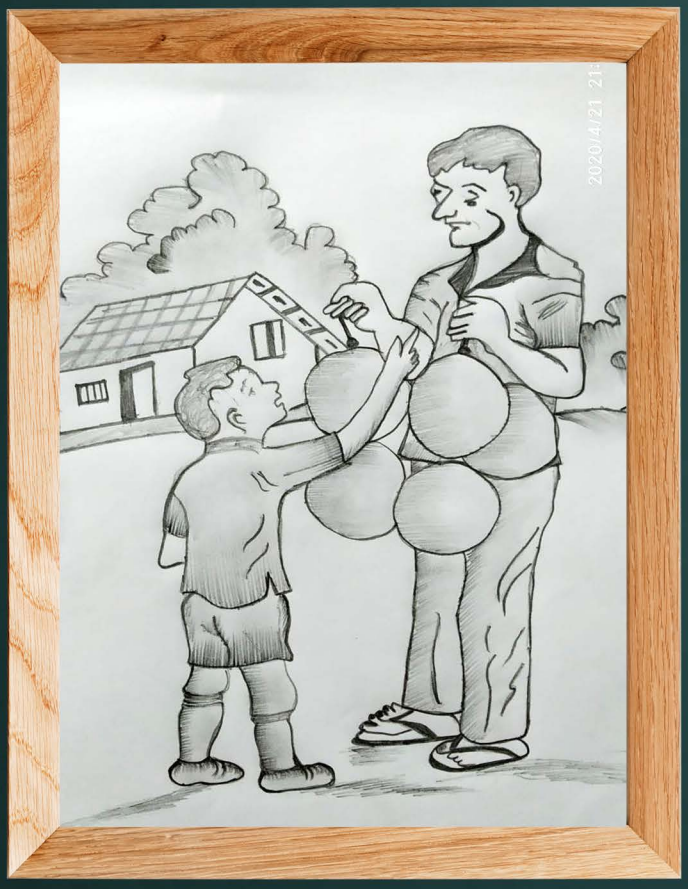
गंगा-यमुना इसकी बेटी,
जन-जन की प्यास बुझाती है।
मानव जीवन ये वो चलाती,
इसकी महिमा प्यारी है।।३।।

काल खंड से खड़ा निरंतर,
भारत का ये रक्षक है।
बाजू की है ढाल बड़ी जो,
महिमा इसकी सुंदर है।।४।।

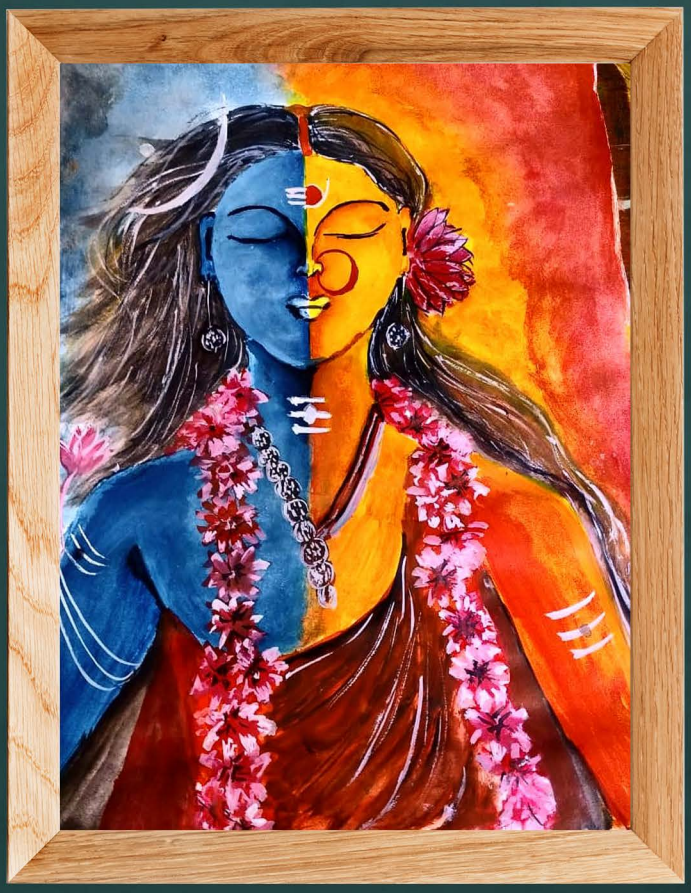
भोले नाथ का घर बड़ा जो,
हम सब के रक्षक है स्वामी।
माता गौरी जहाँ बिराजे,
वो धरती है अति प्यारी।।५।।

प्रत्युष सक्सेना
मैकेनिकल इंजीनियरिंग
चतुर्थ वर्ष

Paint Brush



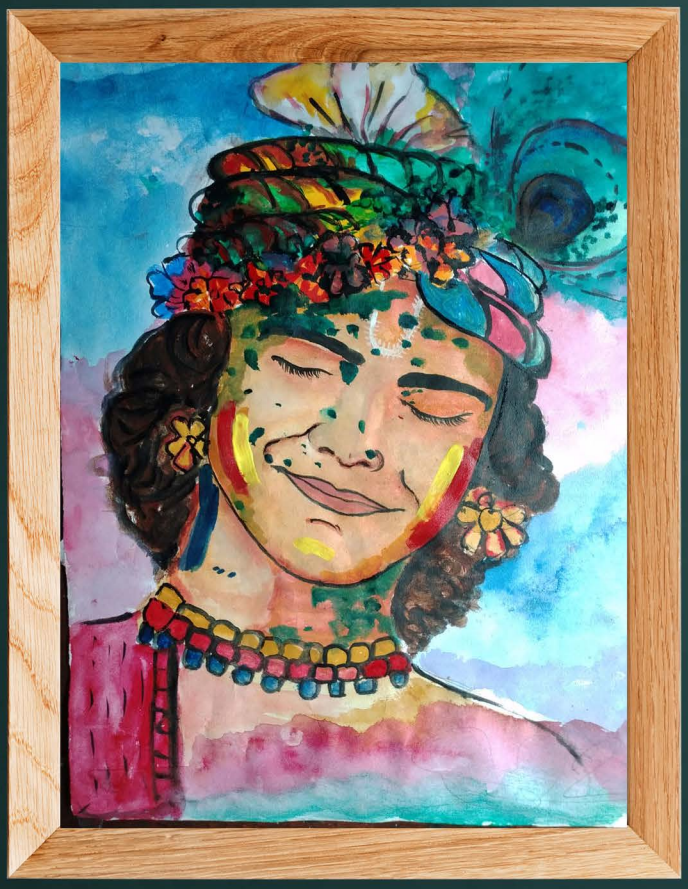
Arghyadip Hazra / ME / 2nd Year



Ratul Manna / CSE / 1st Year

Eshika Bose / CSE / 1st year

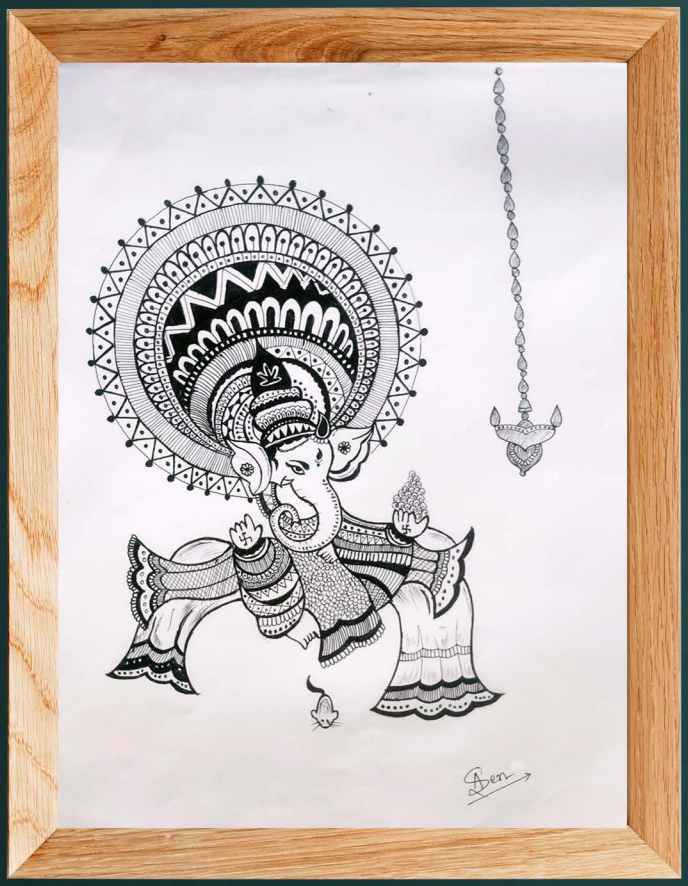
Sarit Kundu / CE / 2nd Year



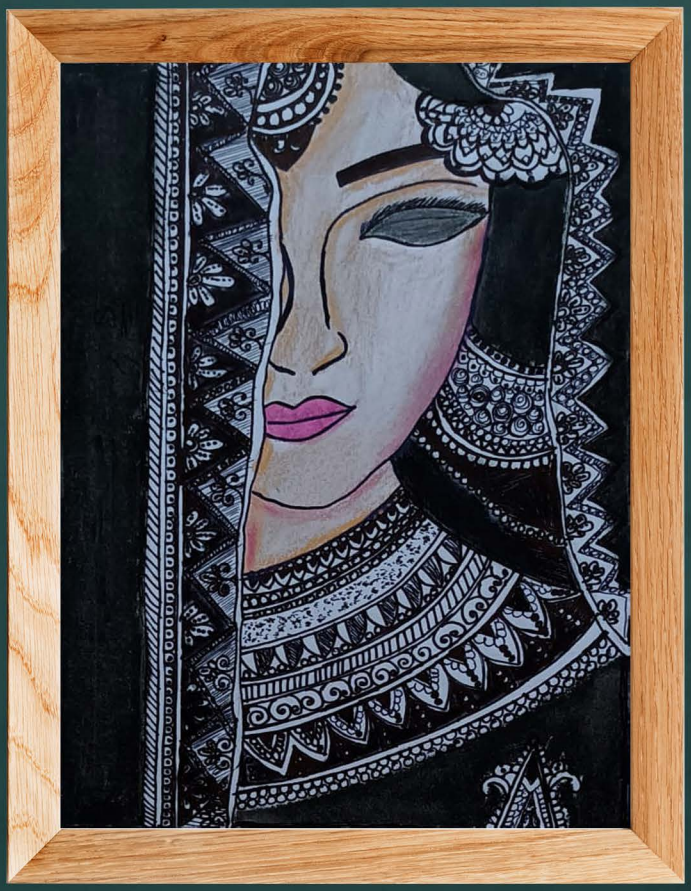
Ratul Manna / CSE / 1st Year

Subho Kumar Pal / CE / 2nd Year

Sarit Kundu / CE / 2nd year



Asruti Sen / CSE / 1st Year



Shilpi Saha / CSE / 4th Year

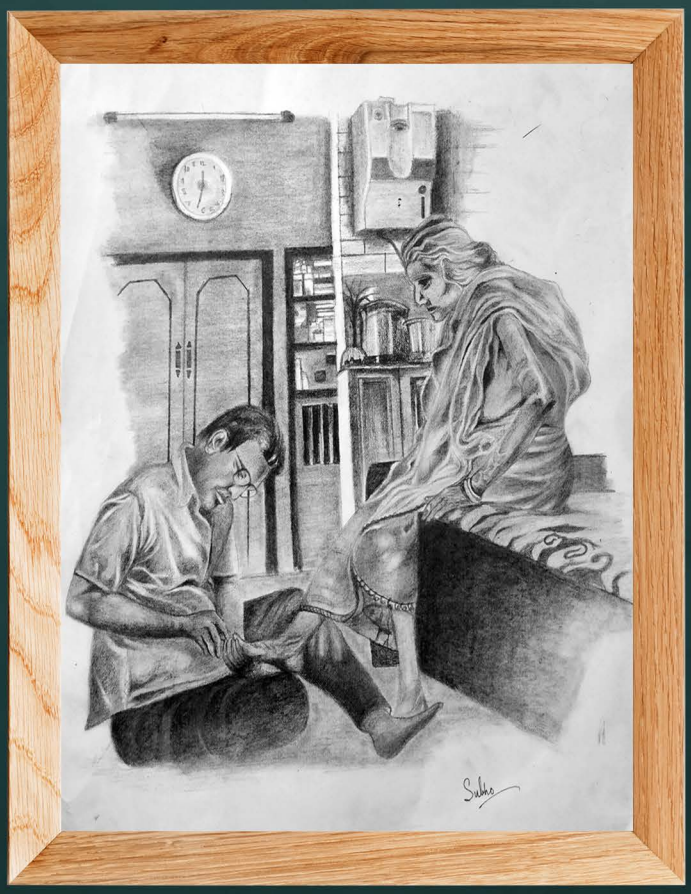
Swikriti Mondal / CSE / 1st Year

Jahir Khan / CSE / 1st Year

Sarit Kundu / CE / 2nd Year

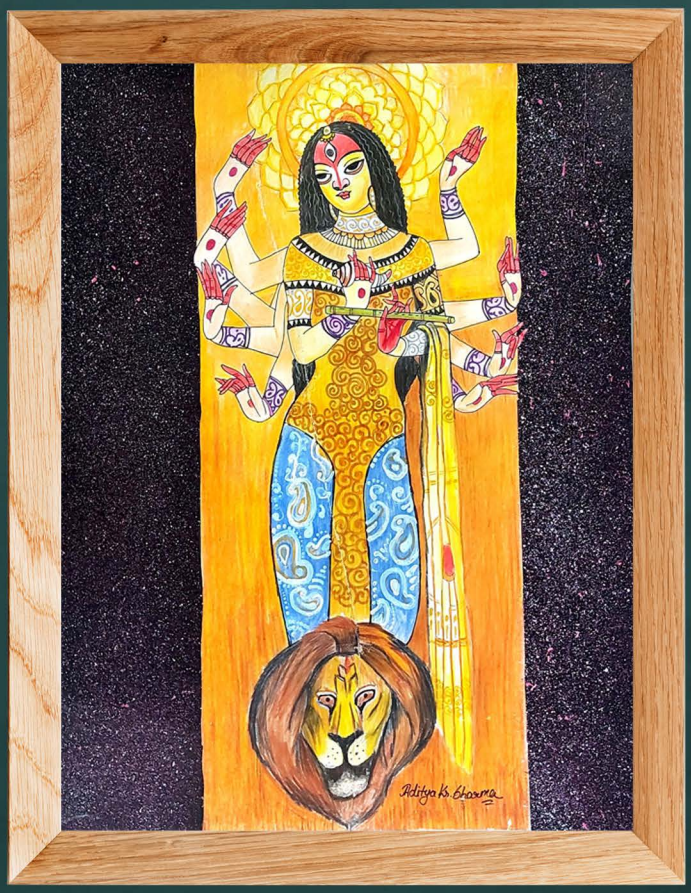
Soumyadwip Bhawal / CE / 3rd Year

Sarit Kundu / CE / 2nd Year

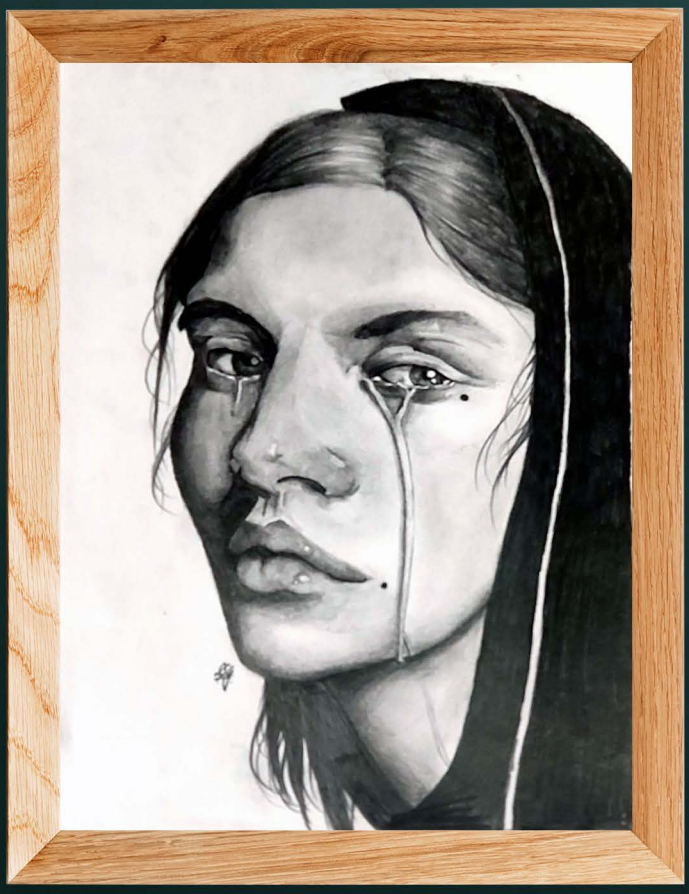


Subho Kumar Pal / CE / 2nd Year

Parna Mukherjee / CE / 2nd Year



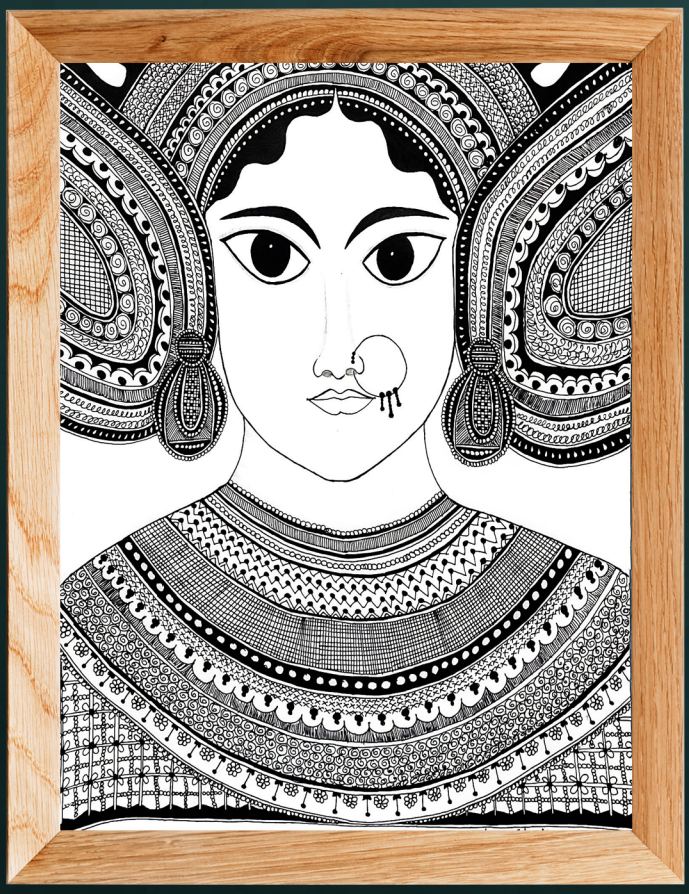
Aditya Kumar Sharma /CSE / 3rd Year



Debopriyo Ganguly / CSE / 1st Year

Debraj Das / CSE/ 1st Year

Aditya Kumar Sharma /CSE / 3rd Year



Ektaa Shaw / CSE/ 3rd Year

TECHIE TALK

Artificial Intelligence Will Make Us Stronger

Dwaipayan Biswas, CSE 3rd year

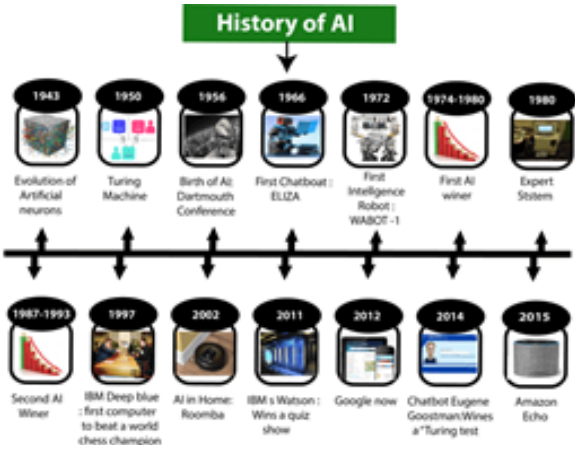
Preface :

Technology is growing very fast in today's world. Day by day we are getting touched with different new technologies. One of the blooming technologies is Artificial Intelligence. It created a new revolution in the world by making intelligent machines. AI is all around us and it is implemented in various field like self-driving cars, problem solving etc. Artificial Intelligence is composed of two words Artificial and Intelligence, where Artificial can be defined as "man-made," and intelligence can be defined as "thinking power", hence AI means "a man-made thinking power."

So, we can define AI as:

"Artificial intelligence is the ability of a computer-controlled robot or digital computer to perform tasks commonly associated with intelligence."

A brief history about Artificial Intelligence :



1943: Warren McCulloh and Ealter Pits proposed a model of Artificial neurons, this was the first recolonization of AI.

1949: Donald Hebb introduced rule modifying the connection of the artificial neurons and named Hebbian Learning.

1956: The American Scientist John McCarthy at the Dartmouth Conference first introduced the word "Artificial Intelligence ".

1966: Joshep Weizenbaum created the first chatbot named it ELIZA.

1972: First intelligent humanoid robot was introduced in Japan named WABOT-1.

1980: AI came back with the "Expert System". These systems were programmed that emulate the decision-making ability of a human expert. This year first nation conference of The American Association of Artificial Intelligence was held at Stanford University.

1997: IBM Deep Blue beat the world chess champion Gary Kasparov and became the first the computer to beat the first world champion.

2006: AI came into the business, Facebook, Twitter and Netflix also started using AI.

2008 - 2019: Today, we have robotic process automation (RPA), speech recognition, a dancing robot, smart homes, and other innovations making their debut.

2020 - Baidu releases the Linear Fold AI algorithm to medical and scientific and medical teams developing a vaccine during the early stages of the SARS-CoV-2 (COVID-19) pandemic. The algorithm can predict the RNA sequence of the virus in only 30 seconds, which is 120 times faster than other methods.

Types Of Artificial Intelligence:

1. Relative Machines: Reactive Machines perform the basic operations. This level of AI is simple. In this no learning happens. This is the first stage of AI system. A machine learning algorithm takes some human face and outputs a box around the face to identify. This model stores no inputs, it performs no learning.

2. Limited Memory: Limited memory is type of Artificial Intelligence.

3. It refers to AI's ability to store previous data and predictions.

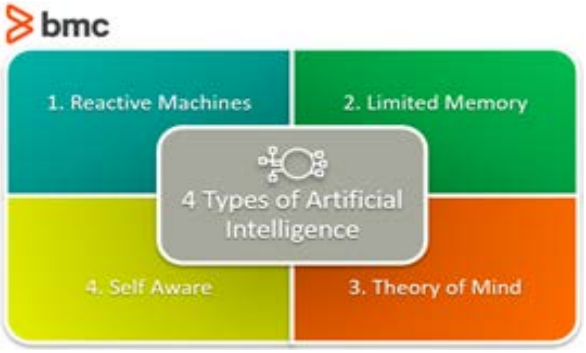
4. Using the data, it makes better predictions. With limited memory

5. Machine Learning architecture becomes more complex.

6. Theory of Mind: This kind of Artificial Intelligence can understand

7. emotions and thoughts. It interacts socially.

8. Self-Aware: This kind of AI exists in stories and also for future.



9. A self-aware intelligence beyond the human has an independent intelligence. What happens, good or bad is anyone's guess.

How Artificial Intelligence works:

An AI system works on combining large sets of data, iterative processing algorithm to learn from patterns and features in the data that they analyse. Each time AI runs a run a data processing it tests and measures its own performance and develops additional expertise. Because AI never needs a pause, it can run through hundreds, thousands, or even millions of tasks extremely quickly. But the trick to understanding how AI truly works is understanding the idea that AI isn't just a single computer program or application, but an entire discipline, or a science. The goal of AI science is to build a computer system that is capable of modelling human behaviours so that it can use human-like thinking processes to solve complex problems. To accomplish this objective, AI systems utilize a whole series of techniques and processes, as well as a vast array of different technologies. By looking at these techniques and technologies, we can begin to really understand what AI actually does, and thus, how it works, so let's take a look at those next.

Applications in Diverse Sectors:

One of the reasons for the growing role of AI is the tremendous opportunities for economic development that it presents. A project undertaken by Price Water House Coopers estimated that "artificial intelligence technologies could increase global GDP by $15.7 trillion, a full 14%, by 2030." That includes advances of $7 trillion in China, $3.7 trillion in North America, $1.8 trillion in Northern Europe, $1.2 trillion for Africa and Oceania, $0.9 trillion in the rest of Asia outside of China, $0.7 trillion in Southern Europe, and $0.5 trillion in Latin America. China is making rapid strides because it has set a national goal of investing $150 billion in AI and becoming the global leader in this area by 2030.

Conclusion:

AI in its recent scenario is definitely an efficient tool in the software industry, it allows for a new way of thinking about coding and provides logic for a lot of engineering problems.

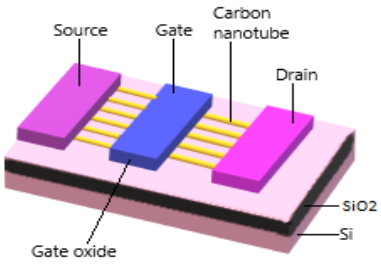
CNT Transistor — Future Of Silicon Transistor

Kasturi Pramanick, Souvik Chakraborty, Suraj Prasad, ECE, 3rd Year

In this age of new technology evolution, we require faster processors, smaller integrated circuits and less power consumption. Advancement in technology such as 5G networks increase the pressure to enhance smartphone battery life, spectral efficiency and more. One potential solution is that the use of carbon nanotube transistors. Because Carbon Nano Tubes (CNTs) can achieve high processing speeds while taking up only a few nanometres of space.

Carbon nanotubes are tubes of single or multiple graphene layer sheets rolled around a central axis with the benefits of being light weight and having perfect hexagonal connection structures. The unique transport properties of them make them very useful in nanodevices.

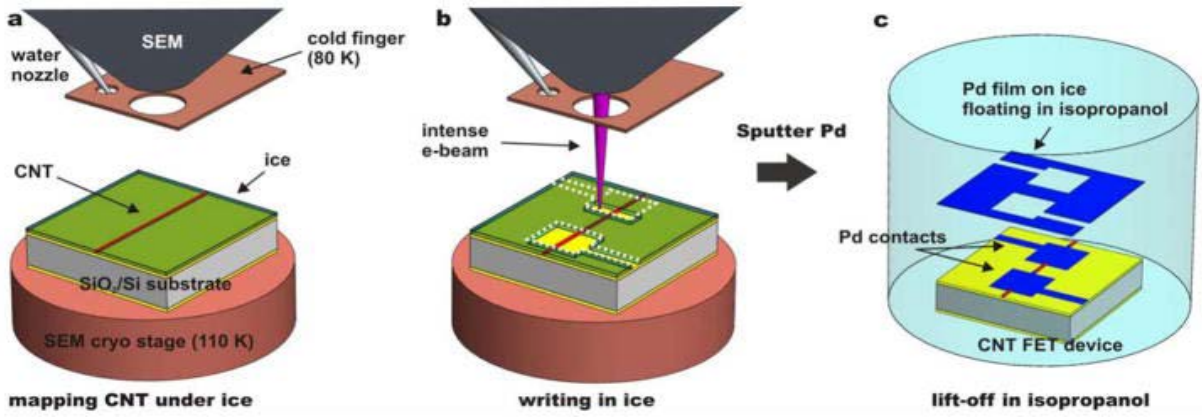
According to Moore's law, the dimensions of individual devices in an integrated circuit have been decreased by a factor of approximately every two years. This scaling down of devices has been propulsion in technological advancement since the late 20th century. From Monolithic IC in 1960 to ULSI (Ultra Large-Scale Integration) in 1989, it has been found that the industry has followed the prediction or observation of Moore.



In the future, it seems to be difficult to follow Moore's law in the IC industry. Up to ULSI, MOSFET and CMOS had made significant contributions to achieving the goal. Increasing the number of MOSFET or CMOS transistors in an IC shows that it will increase the size of an IC rather than the integration will become more complex. To overcome those challenges, the CNT based transistor came into existence. Besides MOSFET, CNTFET also shows a decrease in quantum capacitance whenever there is a reduction in the thickness of the oxide. For CNTFET, threshold voltage is high during the low value of the chiral vector and the threshold voltage is low during the high value of the chiral vector. Even the temperature analysis of CNTFET shows a negligible amount of change in threshold voltage while increasing or decreasing temperature. Finally, when the channel length is about 10nm, the threshold voltage increased in CNTFET but decreased in the case of MOSFET. This proves that high performance in low space can be achieved by using CNTFET in place of MOSFET.

The first simple carbon nanotube transistors were reported in 1998 and were manufactured by placing single-wall CNTs from solution onto oxidized silicon wafers.

A carbon nanotube transistor is a field-effect transistor that utilizes a single or an array of carbon nanotubes as the channel of bulk silicon in the traditional MOSFET structure. The basic principle operation of a CNTFET is also identical to that of a MOSFET, where current flowing from drain to source terminal. The gate terminal controls current intensity within the transistor channel and transistor will be in an off state if no gate voltage is applied.



Fabrication of CNTFET is done with the help of ice lithography. In the first step, carbon nanotubes are solution deposited onto a silicon oxide substrate. The individual nanotubes are then located via scanning electron microscope (SEM) to inject vapour, and the carbon nanotubes are mapped using ice. An intense e-beam draw patterns for the

contacts and removes ice to form a mask for metal electrode contacting the CNT. When an individual tube is isolated through some process, source and drain contacts are defined and electron beam writing is done using high resolution electron beam lithography.

Despite some challenges, such as CNTFET having only a few materials that can be used as gate dielectric (generally air or vacuum) and applying the voltage to the gate causing the nanotube to be closer to the gate, which limits the nanotube, they are the most convenient for nanodevices for high conductivity, low resistance, and negligible energy dissipation of CNT. CNTFET can be used as a gas sensor, in static memory cell, in infrared detectors and etc.

CNTFET are up coming and rapidly developing device due to its outstanding electrical characteristics. They are most promising alternatives for conventional transistors. It is expected that with the same power consumption, they will be much faster than silicon-based transistors.

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Determination Of Wind Design Parameters Using Cfd-Feeded Artificial Neural Networks

Dr. Rajdip Paul
HOD, CE Department, HETC & Convener, Induction Program Committee, HETC

The wind, being the predominant lateral load in skyscrapers, is to be considered accurate in the critical load analysis. A determination of the wind pressure is needed to design structural frames like beams and columns. Additionally, wind force should be considered when designing the finishes and coverings and their joints. As the building code guidelines cannot measure the wind loads in high-rise buildings with the desired level of precision, specialized literature must design them. The researchers have extensively researched the wind load in various plan types of large buildings with various aspect ratios. Model analysis methods (either experimental or numerical, or both) are implemented, and analytical expressions are proposed in some instances to enable the detection of lower-cost, time-efficient determination of wind loads. The Boundary Layer Wind Tunnel (BLWT) test method is an experimental method of determining the wind design parameters. A wind Tunnel is a research tool or a testing laboratory used to apprehend aerodynamically what is happening to a specific shape or object. Whereas, numerical methods involve the application of Computational Fluid Dynamics (CFD). The CFD is a computer simulation tool that generates a 'virtual' wind tunnel to forecast the fluids' motion around objects. Physical modelling of wind-structure interfaces and numerical simulation using computational fluid dynamics (CFD) under a replicated atmospheric boundary layer (ABL) is the only realistic resources for finding precise evidence on wind loads due to the complexity of the dynamic reactions. The 3-D space around an object building, including its atmospheres, is divided into a large number of trivial volume elements. Each element holds the physical features that designate a trifling section of the flow field. The problem is effusively demarcated with the assemblage of elements, the description of boundary conditions, and the choice of starting conditions. CFD simulations, for an explicit wind path, produce the chosen flow parameters like wind velocity, wind pressure, wind force on structures. Outcomes are presented with various conception tools, such as streamlines, iso-surfaces, and, contour plots to describe the flow features. By taking advantage of modern progressions in parallel processing and, high-speed computing, the CFD method is a potent augmentation to the physical wind tunnel, allowing solving complex wind flow complications. CFD has become one of the primary engineering services in determining the wind design parameters of tall buildings, primarily because of its versatility associated with the prediction of pedestrian level wind comfort, cladding forces, and pressures on buildings.

Reactions caused by wind depend substantially on the geometrical shape of the building too. Many physically significant factors, including flutter, galloping, vortex shedding, and buffeting, contribute to complex wind responses for building with wings. Hence, the building geometry and corners shall be modified to optimize high-rise buildings' aerodynamic shapes. As the wind loading requirements do not include provisions for any irregular-shaped buildings, there is enough space and motivation for the researchers in the field to investigate dynamic effects on high-rise buildings' asymmetrical geometry under the wind's influence.

Vigorous, costly, and complex wind tunnel tests have not always been adopted to comprehend the wind-induced responses. For structures' design, CFD has been preferred as an appropriate substitute to foresee correct wind design parameters. In the last decade, some researchers presented that the wind-induced responses can be suitably predicted by training an Artificial Neural Network (ANN), which is proven to be a competent tool in delivering feasible solutions to complex engineering problems. The experimental or CFD data are utilized to feed the neural nets. Wang and Cheng (2010) applied ANN for the wind spectra forecast and calculated wind load on high-rise rectangular buildings. Neural nets are trained to attain crosswind response of high-rise, slender buildings with a specified plan as well as height ratio (Vyavahare et al., 2012) and to put forward a streamlined method for the assessment of the dynamic along-wind response of high-rise buildings as per the recommendations of Indian standard (I.S. 875-Part 3, 2015; Nikose and Sonparote, 2018). Verma et al. (2014) used ANN to forecast the average external pressure coefficients of the high-rise buildings' surfaces. Mallick and Mohanta (2019) carried out wind tunnel model experiments to feed group method of data handling neural networks for developing equations for the prognosis of mean external pressure coefficients on the facets of various C plan-shaped buildings. ANN is adopted to present the average pressure coefficients on all building facets of setback high-rise buildings (Bairagi and Dalui, 2020) and cross-plan-shaped high-rise buildings (Paul and Dalui, 2020). Paul and Dalui (2021) further utilized ANN to compare the along and crosswind force coefficients obtained using CFD and parametric equations.
The selection of ANN topology and the algorithm depends on the type and volume of research. The number of hidden layers and the number and patterns of neurons in each layer shall be chosen wisely. It is difficult to train neural networks to minimal

errors without using many neurons. Hunter and Yu (2012) presented that using many neurons in the hidden layers may lead to inadequate response for other patterns except those used in training. Though the researchers tend to adopt a considerable quantity of neurons to minimize the error, it is desirable to use optimum neurons in the hidden layer to ensure a good ANN(s) response for every pattern. The optimum number can be achieved using the trial and error process.

The Levenberg-Marquardt (L.M.) algorithm and Feed-forward backpropagation (FFBP) architecture is shown in Fig. 1. The architecture of the ANN consists of one input, one hidden, and one output layer. The diagram is arbitrary, considering three inputs, fifteen neurons in the hidden layer, and two outputs, only for understanding the associated FFBP architecture of the L.M. algorithm. There are issues with the L.M. algorithm, such as only multilayer perception (MLP) grid architectures can be trained (Hagan and Mehnaj, 1994), and only relatively trivial problems with only a restricted pattern can be solved using this algorithm (Hunter and Yu, 2012). Even then, Levenberg (1944) and Hagan and Menhaj (1994) suggested that the Levenberg Marquardt (L.M.) algorithm is the most efficient of many available second-order neural network training methods.

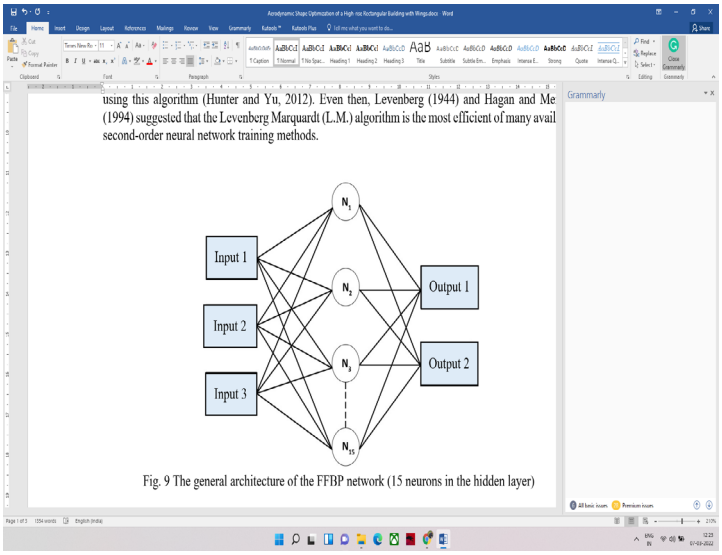

Fig. 1 The general architecture of the FFBP network (15 neurons in the hidden layer)

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BRAINIAC Answers

CE DEPARTMENT

1. (c)
2. (b)
3. (d)
4. (d)
5. (b)
6. (c)
7. (c)
8. (d)
9. (a)
10. (d)

CSE DEPARTMENT

1. (b)
2. (c)
3. (b)
4. (d)
5. (c)
6. (b)
7. (c)
8. (a)
9. (c)
10. (d)

ECE DEPARTMENT

1. (d)
2. (a)
3. (d)
4. (c)
5. (a)
6. (b)
7. (a)
8. (d)
9. (c)
10. (b)

EE DEPARTMENT

1. (b)
2. (b)
3. (a)
4. (d)
5. (a)
6. (d)
7. (d)
8. (a)
9. (c)
10. (d)

ME DEPARTMENT

1. (c)
2. (d)
3. (b)
4. (b)
5. (c)
6. (a)
7. (d)
8. (c)
9. (d)
10. (b)

FEEDBACK

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Thanks and Regards,
Magazine Committee

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