

LUMINEUX

Annual Newsletter of Physics Department

Teacher's & Editorial's note

Department & Association Activities

CELEST'22

Quantum computing

Jewels of our crown

**Artista
Scribe**



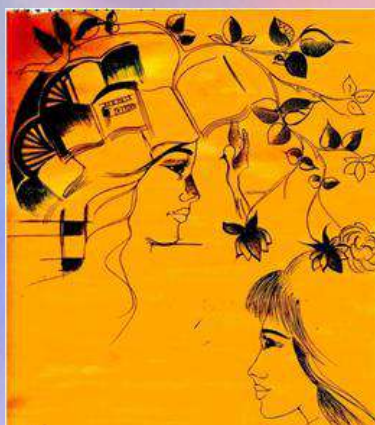
Aman Verma



Aqshee Sharma



Harshita



Aman Verma



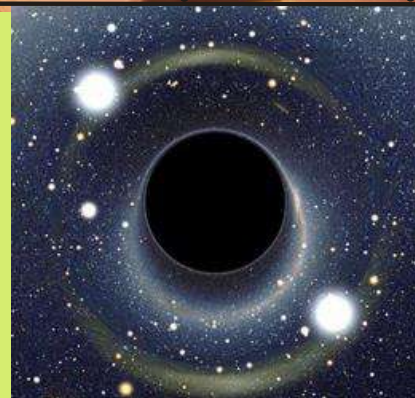
Khushi



Neetu Rani

Rogue black hole spotted

Astronomers detected and measured mass of the first ever isolated stellar black hole traversing through Milk Way.



Until now, scientists were able to detect the stellar-mass black holes in binary systems such as binary system with neutron star. They are detected because of their interactions with their partners which can generate light or gravitational waves whose properties signal a black hole's presence. The absence of such partners make it hard to detect the existence of isolated black holes.

Now, with the help of NASA's Hubble Space Telescope, and years of observations, scientists have finally discovered one about 5,150 light-years away from Earth, in the direction of the bulge in the center of the Milky Way. The researchers estimated this isolated black hole was about 7.1 times the mass of the sun. They also found this black hole is traveling at a speed of about 100,000 mph. This suggests that this black hole may have received a kick from the supernova explosion that gave birth to it.

The principal behind the discovery of black hole gravitational lensing described by Albert Einstein theory of general relativity. In this technique, any massive mass bends the light around it. Scientists observed a substantial shift in the light coming from the stars, showing the lensing effect leading to discovery of black hole.

Compiled by:
Manisha 3rd year



PROF. SAVITA ROY



Being the one who pioneered the Physics department of our college, Her interest and enthusiasm regarding the department has been incredible. It is her constant support that has made it possible for us to be where we are today. She inspires us to work harder and recognizes the efforts of each and every member, thus encouraging active participation. We are extremely grateful to her guiding nature and love towards Physics as a subject and towards all those who are associated with it. Indeed, she's the one who puts the winds in our sails and helps us venture towards new horizons.

DR. OMWATI RANA



Her amiable nature and delightful personality makes every student feel comfortable in her class. She makes students understand even difficult concepts with great ease, shedding away the student's fear and anxieties while learning something new. Always ready to address student's doubts, she portrays each quality of an exemplary teacher. Her encouraging remarks stay with the students beyond the classroom, and continues to inspire them to measure great lengths in all lanes of life. She's truly responsible for nurturing the best out of the entire physics department and its students.

Our Marvellous mentors...

The duties of a teacher are neither few nor small, but they elevate the mind and give energy to the character
-Dorothea Dix

DR. SHEFALI JAIN



Being one of the politest teachers of the department, she teaches in a manner which invites students to dwell deep in the subject. Her practical teaching has its own unique style which helps students develop their soft skills. Her approachable nature makes it easy for the students to ask doubts and clear their concepts. She energetically takes part in all activities of the department and makes sure of the success of the event. Her motto encompasses that putting one's heart and soul in their work shall always bear fruit.

MS. JYOTI CHAUHAN



She is one of the most energetic teachers, always ready to share her experiences and ensures a constant overall growth of her students. She is the youngest of all teachers and also the one having a pool of interesting ideas to share and books to refer to. Her cooperative behavior makes her a lovable teacher.

DR. SHOBIT SACHAN



His calm and cheerful approach towards students makes them comfortable enough to ask him about their doubts in the subject during class. He takes the time to explain all the basic concepts and derivations in simplest form. He always motivates students to read more and give them a pool of problems to solve to elevate their level. He addresses every doubt of the students. He constantly motivates student to explore Physics and how to implement it in real life.

DR. ONKAR MANGLA



His focused teaching style and great time management so as to cover all aspects of a given subject make him a guiding figure for the students. Being in his class, one is sure to learn things that shall stay with them in the long run of their academic life. His practical skills are unparalleled and he inspires the students to work towards achieving the best. Bearing a smile, he takes part in activities of the department and encourages students to tread forward in their paths. He is the teacher who is ready to take up meticulous work and effortlessly bring out desired results.

DR. NEERU SEHDEV



She is admired for her discipline as well as courteousness. She has the sweetest voice and outstanding skill of making concepts easily understandable. She underlines the usefulness of smart work and knows how to bring out the potential of her pupils. She makes her students feel motivated and encourages active participation in both curricular and co-curricular activities. She is overseeing the department with her extensively creative administration, integrity and proficiency.

DR. DISHA WADHAWAN



Always carrying a smiling face, she motivates her students to indulge in practical physics. Having a lot of research experience, she brings physics to life. Along with a caring nature she is always ready to take the queries of the students. She herself has relinquished a lot of research work and never hesitates to share her experience as a researcher. She has a strong grip on her subject and believes in exploring the subject in-depth with her major work in thermal physics.

MS. SITAKSHI GUPTA



She has recently joined us & still she has mingled with us is appreciably well. Her way of explaining the concept & addressing doubts is remarkable. With a kind and intellectual soul she always encourages us to elevate our skills. She is highly knowledgeable of her subject and always takes up doubts readily. She never fails to narrate her experience to encourage students. Her helpful nature makes her one of the most adorable teachers for the students.

EDITORIAL'S NOTE



Greetings there, my experience of being a newsletter editor has been a cognitive voyage to me. Covering all the events and activities taking place in the department has been a thrilling experience. The aim of releasing the newsletter is to give the non-departmental community a glimpse of the department's functioning and take them on a knowledgeable ride. The students of the physics department were immensely active in various events and have shown their skills apart from the usual learnings. The reader can find a lot of stuff regarding Physics and discipline. Along with this he can expect a wide variety of artistic portions too. As rightly said: "A writer only begins a book, the reader finishes it". I hope the readers of the newsletter will get something beneficial from this edition.

Manisha
3rd Year



All things associated with physics I believe, possess in themselves a grandeur of a sort and so does our department. Lumineux is like a mosaic made up of the entire year's amazing events, competitions and above all the efforts and working of each and every member of our department. It indeed has been an honor for me to be able to contribute my small piece to the bigger and final picture and also to have had the opportunity to bring forth the wonderful pieces of art in the best possible way. I've learned a lot in the process of making this newsletter and I'm sure that the takings from this experience shall help me throughout my life. With the hope that our attempt does justice to these ideas, I also want to extend my gratitude to the readers since they're the ones who give meaning to the work we do. Set back and enjoy!

Hooriah Lodi
2nd year



I am honored to present the fifth edition of Lumineux, through which we look back at the passing year's ventures of Coherence, the Physics Department of Daulat Ram College. As you flip through the pages, you will come across splendid poems, informative articles, reports on memorable events and competitions, magnificent drawings, and amazing paintings. I am grateful for having the opportunity of being a part of the editorial board. It was a marvelous experience of learning, communicating and last but not the least, working with the editorial members. Also time management is one of the crucial skills which I am still learning. I really appreciate the readers for taking time to read it. As someone said "Reading is the gateway skill that makes all other learning possible". I hope this edition of the newsletter will illuminate the best of your knowledge.

Anjali Singh
1st Year

NOTE FROM PRESIDENT OF COHERENCE

UNION 2021-22

Coherence, Physics Association Union 2021-22



Divyanshi Sahni
(Vice President)



Deepali Yadav
(President)



Shagun Virmani
(Secretary)



Manisha
(Co-Joint Secretary)



Khushi
(Treasurer)



Vishakha
(Joint Secretary)

Coherence will always stay very close to my heart. Every opportunity it gave me, helped me discover a lot of new things, helped me grow as a person and as a leader, sharpened my skills and it made me a responsible person. A very good quote that I read somewhere, "Leadership is recognizing that we are all one, that every person you lead is as brilliant as you and has some capacity for growth and accomplishment. They simply need to be reminded of this fact" and from that day it is stuck in my mind. This position has allowed me to contribute my fair share for the department, I hope we were able to fulfill everyone's expectations. It's been a great journey with joyful classmates, amazing seniors, and lovely juniors.

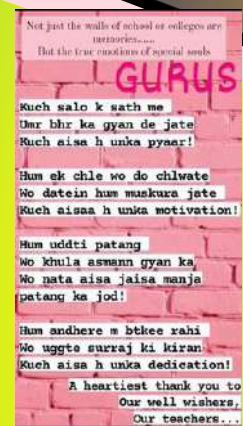
I am grateful to my friends for being my constant source of support and making this journey memorable. I thank my teachers for their support and guidance throughout the tenure and a big thanks to all the union members, extended committee members, and volunteers for making every event a great success. Thank you Coherence!

Deepali Yadav (President 2021-22)



DEPARTMENT & ASSOCIATION ACTIVITIES

Teacher's Day 2021



Coherence, The Physics Association of Daulat Ram College organized Teacher's Day celebration on 6th September 2021 via Google meet. The celebration started with the Saraswati Vandana in the melodious voice of Ms. Vaishnavi Chaturvedi followed by a virtual cake cutting ceremony with the blessing of our Respected Principal ma'am Dr. Savita Roy and Vice Principal ma'am Dr. Sarita Nanda. More joy was added to the celebration by virtuoso talents like dancing, singing, poetry and melodious instrumental performance and different games. All the teachers were overwhelmed by their eye-catching portraits by Gunjan Mishra. A Heartfelt Tribute was paid to our beloved teacher of Physics Department- Late Dr. Tarun Choudhary which left everyone's heart heavy with emotions. Overall, it was a Joyful, and a Heart-warming Day.



Farewell 2021

COHERENCE, The Physics Association of Daulat Ram College organized Its Farewell'21 for the batch of 2018-21 on 26th July 2021 on Google meet. It was organized online in view of the widespread pandemic. Along with the emotional messages and beautiful videos by all, the ramp walk videos were also shown. Some fun games were played as well, as the beautiful journey of celebrations continued. Soon after, the final year students were given some fun titles based on their personalities. Overall, it was a very emotional and memorable day for all.



Miss Witty
Simarjeet Kaur

Miss Talented
Anushka Sharma

Miss Attire
Bhumija Chaudhary

Miss Farewell
Ritika Singh



Every moment is a fresh beginning

DEPARTMENT & ASSOCIATION ACTIVITIES

Inaugural lecture 2021-2022

The Physics department of Daulat Ram College organized its Inaugural lecture titled "Photonics: For Energy Conversion and Conservation" on 13th September 2021 via google meet.

The guest speaker Dr. Ritu Srivastava is a Senior Principal Scientist from CSIR-National Physical Laboratory, New Delhi.

Ms. Srivastava embraced everyone with knowledge of "Photonics". She introduced the audience to energy requirements and the importance of its conservation in the world and India in today's time. She explained the synthesis of various nanomaterials used for various photonic technique.

She also enlightened students about the road map to do an internship and research at NPL. The whole Session was Perceptive. The talk was very insightful and the glimpses of the Glory of the Physics department were remarkable.



Lecture Series

This lecture series comprised of three lectures delivered by distinguished and eminent speakers of different universities over the period of Jan- Mar 2022. The motive of this lecture series is to provide the fundamental knowledge on the concept of Physics and the beauty of its role in our practical exposures.

The inaugural ceremony was graced with the presence of Dr. Savita Roy, Principal and Dr. Sarita Nanda, Vice Principal of Daulat Ram College.

The first lecture given by Prof. Rajaram Nityananda began by raising some simple questions about light and exploring these concepts leading to interesting current applications in science and technology.

In the next lecture by Prof. Ajoy Ghatak, the evolution of various theories of light was discussed and how these ideas eventually led to quantum theory along with the significant contribution of Schrödinger equation in the evolution of Quantum Mechanics.

The final lecture of this series is awaited and would be conducted soon. It will be delivered by Prof. T.R. Seshadri.

Both the webinars witnessed huge participation of around ~ 140 participants from various national institutes and universities.

COHERENCE
THE PHYSICS ASSOCIATION
DAULAT RAM COLLEGE
Invites you to it's
Inaugural Lecture
OR
**PHOTONICS - FOR ENERGY
CONVERSION AND CONSERVATION**

DR. SAVITA ROY
(Patron)
Principal
Daulat Ram College
University Of Delhi

DR. RITU SRIVASTAVA
(Eminent Speaker)
Senior Principal
Scientist
CSIR - National
Physical Laboratory
New Delhi

SEPTEMBER 13, 2021 | 10 AM | GOOGLE MEET

**PHYSICS DEPARTMENT
DAULAT RAM COLLEGE**
(University of Delhi)
DRT Star College, PGAC Accredited College, "A" College Rank, India Today
Ranking: Science - 7th Rank, Commerce - 12th Rank, Humanities - 15th Rank

Organizes
Understanding Physics- Basics & Beyond
with its first lecture titled
"UNDERSTANDING AND USING LIGHT"
On January 12, 2022 || 3:00 PM onwards

Abstract
This talk will begin by raising some simple questions about light which might cross the minds of students and teachers of the subject, exploring these leads us to some interesting current applications in science and technology.

Prof. Rajaram Nityananda
(Guest: Young Science City, Bangalore, a senior scientist at Indian Institute of Space Science and Technology, Thiruvananthapuram and IISc Centre for Interdisciplinary Sciences, Hyderabad)

Dr. Neeru Sehdev (Convener)
Dr. Shefali Jain (Co-Convener)
Prof. Savita Roy (Principal)

Organizing Committee: Dr. Omwati Rana, Dr. Onkar Mangla, Ms. Jyoti Chauhan, Dr. Dishu Wadhawan, Dr. Shobhit Sachan and Ms. Sitakshi Gupta

Link: <https://zoom.us/j/97130654225>
pwd: XYVWZUJHBCUYGVFWGQWZLDS02
Meeting ID: 971 3065 4225
Passcode: 162093

**PHYSICS DEPARTMENT
DAULAT RAM COLLEGE**
UNIVERSITY OF DELHI
DRT Star College, PGAC Accredited College, "A" College Rank, India Today
Ranking: Science - 7th Rank, Commerce - 12th Rank, Humanities - 15th Rank

invites all the students & faculty members to
join us for the online lecture series on
**"UNDERSTANDING PHYSICS:
BASICS & BEYOND"**
Time: 3:00 PM IST / Platform: Zoom

Prof. Rajaram Nityananda
(Bansal Institute of Science & Technology, Former Director of National Centre of Basic
Astronomical, TIFR Pune & TIFR Centre for Interdisciplinary Sciences, Hyderabad)

Lecture 1: Understanding And Using Light
Date: 12th January 2022

Prof. Ajoy Ghatak
(The National Academy of Sciences India,
Former Professor of Physics at IIT Delhi)

Lecture 2: What Is Light And Evolution of Quantum Theory
Date: 19th January 2022

Prof. T. R. Seshadri
(Department Of Physics & Astrophysics, University Of Delhi)

Lecture 3: Distance Measurements In Astronomy
Date: 2nd February 2022

Registration not required!
In case of any queries, kindly contact: +9190137 79052 | +9196508 79450

Dr. Neeru Sehdev Convener
Dr. Shefali Jain Co-convener
Prof. Savita Roy Principal

**Physics Department
Daulat Ram College**
(University of Delhi)
DRT Star College, PGAC Accredited College, "A" College Rank, India Today
Ranking: Science - 7th Rank, Commerce - 12th Rank, Humanities - 15th Rank

Organizes
Understanding Physics- Basics & Beyond
with its second lecture titled
**"WHAT IS LIGHT &
EVOLUTION OF
QUANTUM THEORY"**
On January, 2022 || 3 PM Onwards

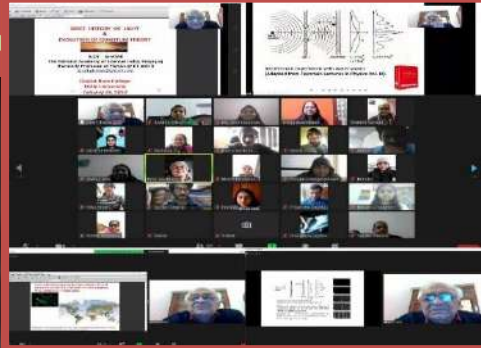
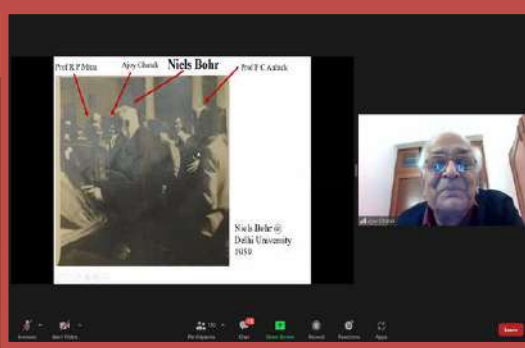
The lecture will briefly discuss the evolution of various theories of light which eventually led to quantum theory. The Schrodinger equation (and its simple solutions) and the double slit interference experiments will also be discussed.

Prof. Ajoy Ghatak
(President, NASI
(Former Professor of Physics
IISIT Deing)

Dr. Neeru Sehdev (Convener)
Dr. Shefali Jain (Co-Convener)
Prof. Savita Roy (Principal)

Organizing Committee
Dr. Omwati Rana, Dr. Onkar Mangla, Ms. Jyoti Chauhan,
Dr. Dishu Wadhawan, Dr. Shobhit Sachan and Ms. Sitakshi Gupta

If not us, who? If not now, when?-- John F Kennedy



WINNERS



1) Designer of the Day:
Ms. Mansi Sachdeva (2nd Year)
Cash Prize: Rs 200/-



2) Coder of the Day:
Ms. Manisha (3rd Year)
Cash Prize: Rs 200/-



3) Young Designer of the Day:
Ms. Anjali Singh (1st Year)
Cash Prize: Rs 100/-



4) Young Coder of the Day:
Ms. Preeti Maurya (1st Year)
Cash Prize: Rs 100/-

2 - Day Workshop on Enhancing Programming Skills using Python and XCOS



The Physics Department, Daulat Ram College organized its 2-day workshop entitled “Enhancing Programming Skills using Python and XCOS” on 13th -14th January, 2022. There were total 135 participants from Physics Department. The workshop was designed in the form of 3-lecture sessions each day and it mainly focused on the introductory level of XCOS and Python Programming, with the faculty members of the Physics department as the resource people.

On the first day the participants were introduced to Scilab and were equipped with the uses and applications of XCOS (an inbuilt tool of Scilab)-a very powerful, open-source software that can be used for modeling and simulating various dynamical systems via block-based model. Attending this workshop enabled students to visualize various electrical/electronic circuits.

The second day of the Workshop aimed to upskill the students with yet another popular and in demand programming language Python. The participants were trained with basic commands, operations, control structures and graphics used in Python especially in the context of problem solving in Physics. Thereafter the students were trained to explore the world of visualizations with Matplotlib library in Python.





APPROCIATION AWARD
YOUNG DESIGNER OF THE DAY
Name: Miss Anjali Singh Year: 1st Year
CASH PRIZE Rs. 100/-



APPROCIATION AWARD
YOUNG CODER OF THE DAY
Name: Miss Preeti Maurya Year: 1st Year
CASH PRIZE Rs. 100/-



DESIGNER OF THE DAY
Name: Miss Mansi Sachdeva Year: 2nd Year
CASH PRIZE Rs. 200/-



CODER OF THE DAY
Name: Miss Manisha Year: 3rd Year Roll No.: 17027
CASH PRIZE Rs. 200/-



The power of imagination makes us infinite- John Muir

DEPARTMENT & ASSOCIATION ACTIVITIES

FRESHER'S 2022

Like every year, this year also COHERENCE, The Physics Association of Daulat Ram College organized the Fresher's Party on 8th January 2022. Fresher's Party is the start of the new journey and welcome of the new students in a warm and friendly atmosphere. It encourages their creative impulses and boosts their confidence. It is the day where seniors and juniors finally bond and unite to celebrate being part of the college as a member of our department.

This year, the theme of the Fresher's Party was "Principessa - The red carpet glam". Our Freshers dressed in gorgeous outfits looking like a beautiful and charming princess. They introduced themselves and showcased their unique talents through ramp walk. All of them were impressive in their own way. The fresher's day was filled with excitement, joy, music, enthusiasm, laughter and happiness.

It was a wonderful event that creates sense of love and unity among all the seniors, juniors & teachers.

Title Winners

Miss Fresher
Nandini

Miss Diva
Monisha

Miss Talented
Ekta

Miss Witty
Harshita Khatana



What we think, we become - Buddha

DEPARTMENT & ASSOCIATION ACTIVITIES

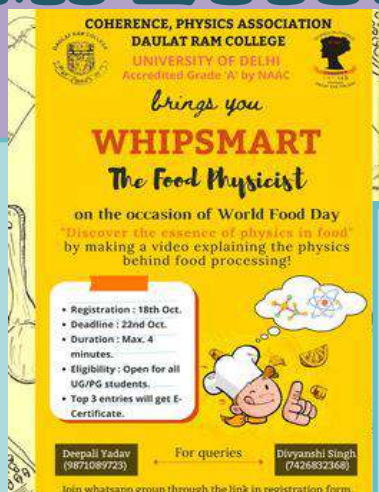
COMPETITIONS

WHIPSMART- THE FOOD PHYSICIST

COHERENCE, The Physics Association, Daulat Ram College organized a video-making competition "WHIPSMART - THE FOOD PHYSICIST" on 16 October 2021 on the occasion of WORLD FOOD DAY. It was very interesting and an innovative activity. Participants had to make a video of processes involved in the making of a particular food product and explain the physics behind it.

The winners of the competition:

1. Manisha (3rd year) - first position (Daulat Ram College, DU)
2. Aashee Sharma (3rd year) - second position (Daulat Ram College, DU)
3. Raj Kohli (2nd year) - third position (Shivaji College, DU)



PARALLEL UNIVERSE

The poster making competition

COHERENCE, The Physics Association, Daulat Ram College organized "The Poster Making Competition" on the theme "Parallel Universe" on 22 January 2022. There were 20 registrations for this competition. Participants made handmade posters on the given theme and they prepared a video in which they explained the idea behind their posters.

The winners of the competition:

1. Naaz (1st year), B.A (H) Hindi, Daulat Ram College
2. Mansi (2nd year), B.Sc. (H) Physics, Daulat Ram College
3. Santhra Jojan (1st year), B.Sc. (H) Physics, Daulat Ram College



PHYSICSTASTIC

COHERENCE, The Physics association, Daulat Ram College organized an article writing competition "Physicstastic" on 12 February 2022 on the occasion of "International Day of Women and Girls in Science". This activity was exclusively for the students of physics department. Many Students registered for the competition, and enjoyed performing in the activity. Students pen down their views and showed their creativity in the article within the given specific word limit. The below mentioned top three entries were awarded with the certificate of appreciation.

The winners of the competition:

- 1.1st winner, Manisha (3rd year), B.Sc (H) Physics, Daulat Ram College
- 2.2nd winner, Aashee (3rd year), B.Sc. (H) Physics, Daulat Ram College
- 3.3rd winner, Nidhi (1st year), B.Sc. (H) Physics, Daulat Ram College



Celebrating Women in Physics

The top 3 entries for "Physicstastic—the article writing competition on the International day of women and girls in science have been featured below.

"She was not fragile like a flower, she was fragile like a bomb". From very old times, it's been considered that a subject like Physics which talks about formulas is made for people indulged in deep thinking. As obvious, the hypocritical society didn't consider women one of them. They didn't have any reasons but continued to put constraints on them. But as rightly said time never remains the same, she rose, broke the chains and has betrayed the sky. With universities not allowing women to opt science as a career, there were some hidden hearts burning with the desire to excel in Physics. One of them was Marie Curie, she is considered as the first female physicist. She broke the stereotypes by winning the Nobel Prize in Physics in 1903 for her work in the field of radioactivity. But when we start talking about a person's achievements we forget the obstacles they had to overcome to reach the destination. Marie had the two obstacles in her path: first Poland didn't have science institutes open for girls and second money. But she overcame all and also became the first person to win 2 Nobel prizes. Her discovery of Polonium and radium opened the doors for treatment of disease like Cancer which was initially thought as incurable. She inspired a lot of other women to go for Physics. From Hedy Lamarr playing with frequency techniques to Chien-Shiung Wu discovering the law of conservation of parity, the list is endless and more names are added with time. How can we forget VR Lalithambika, Muthayya Vanitha and Ritu Karidhal who stand as the major faces behind Gaganyaan and Chandrayaan-2 respectively? Today you can find women in every domain but there are faces like Lise Meitner who discovered nuclear fission went unnoticed. History has seen many great female physicists and has many in store for the future, but it's our responsibility to celebrate women in Physics to encourage their contribution and bring out the fortunate.

1st Winner Manisha (3rd year)

Woman- A word full of incredible power, courage, trust, talent, and grace. An epitome of strength and a true powerhouse of talent. They are the queens who rule the world in every single field, be it business, politics, corporate, or last but not least science! To celebrate women in science, The International Day of Women and Girls in Science is observed by United Nations (UN) on 11th February each year. The day aims to promote the participation of women in science, technology, engineering, and mathematics (STEM). A significant gender gap exists in STEM fields to date. When we talk about women in Physics, women are widely under-represented. Physics and sexism have been thrust into the spotlight in recent times by incendiary comments made by theoretical physicist Alessandro Strumia. He claimed that women were less capable than men at physics research. Let's get one thing straight, WOMEN are just as capable as men at physics. The day after Alessandro was suspended by CERN for his demeaning remarks, Donna Strickland received the Nobel prize in physics. And you know who she is- A Woman! History and science books are littered with mentions of 'great' men, but it's the time when the contribution of women scientists should also be recognized and brought to the knowledge of everybody. We often discuss the contribution of Newton, Einstein, and Maxwell but how often do we discuss the contribution of Marie Curie for her extraordinary research on radiation phenomena? Or Donna Strickland for her method high-intensity, ultra-short optical pulses? The world needs physics and physics needs more women! As we celebrate Women in STEM, let's join our hands to inspire and encourage more women and girls to take up physics and pursue their careers in STEM, and also we should not lag to recognize their contribution in the field

2nd winner Aashee (3rd year)

Today there is a strong participation of women in every field of life even in the field of science. Today, women scientists are making their mark in challenging fields ranging from space science to chemistry, physics, biotechnology, nano-technology, earth and environmental sciences, mathematics, engineering and agricultural sciences. But due to their social and family responsibilities, it has never been easy for women to achieve a place in the world of science.

A few decades ago, this situation for women was more challenging. But, even in that period of the twentieth century, some women left the challenges behind and joined science and made their unique identities which the world still remembers.

American computer scientist Katie Bauman became famous around the world with her picture of black hole. Like Bauman, many other women have contributed to the world of science but they did not get recognition. If I talked about our Indian Women Physicist the journey and contribution of Anna Mani, Radha Balakrishnan, Lilabati Bhattacharjee, Archana Bhattacharyya, and so many are appreciable. Physicist Bibha Chowdhuri is one of the early contributors of science — and has a 'star' named after her.

Now time is changing. Women doing too hard work in every field of life. Whether it is the matter of touching the height of the sky or the responsibility of measuring the depth of the sea or the courage to be posted on the border, today women have proved themselves in every field of life, so we should praise and give respect to their work.

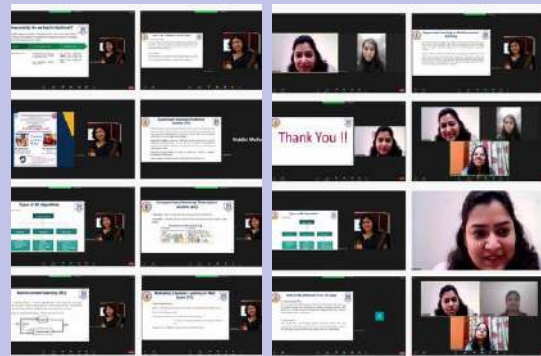
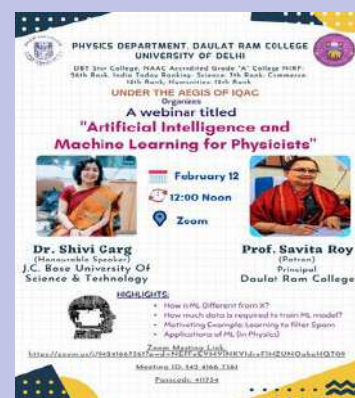
3rd winner, Nidhi (1st year)

WEBINAR ON "ARTIFICIAL LEARNING AND MACHINE LEARNING FOR PHYSICIST"

The Physics department, Daulat Ram College organizes a webinar titled "Machine Learning and Artificial Intelligence for Physicist" on 12th Feb 2022. The event is graced by the presence of our respected Principal ma'am Dr. Savita Roy.

The event starts with melodious Saraswati Vandana followed by the talk by our respected speaker Dr. Shivi Garg, Assistant professor from J C Bose University of Science and Technology. She explained the role of artificial intelligence for the physicists in a very interactive and joyable manner. She mentioned some of the milestones achieved on the part of artificial intelligence. She further threw light on the fact how iOS is more secure than Android. The session went on to be more informative as she continued to talk about the daily use apps and their security and intelligence.

The webinar witnessed participation of around ~ 70 participants. It proved to be very informative and enriching session for both students and faculty members.

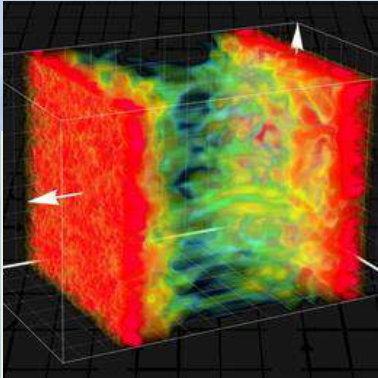


Science is magic that works-Kurt Vonnegut

Latest

In PHYSICS

Uncovering the Secrets of the Big Bang with Artificial Intelligence



Tiny particles whirl around wildly with extremely high energy, countless interactions occur in the tangled mess of quantum particles, and this results in a state of matter known as “quark-gluon plasma.” Even though it might be hard to believe but the entire universe, immediately after the Big Bang, was in this state! Such states are now produced by high-energy atomic nucleus collisions, for example at CERN. These processes can only be studied using high-performance computers and highly complex computer simulations whose results are difficult to evaluate. Using artificial intelligence or machine learning for this purpose seems like a beacon of hope to understand and study these systems better.

“Simulating a quark-gluon plasma as realistically as possible requires an extremely large amount of computing time,” says Dr. Andreas Ipp from the Institute for Theoretical Physics at TU Wien. “Even the largest supercomputers in the world are overwhelmed by this.” It would therefore be desirable not to calculate every detail precisely, but to recognize and predict certain properties of the plasma with the help of artificial intelligence. This is done with the help of neural networks similar to those used for image recognition: Artificial “neurons” are linked together on the computer in a similar way to neurons in the brain — and this creates a network that can recognize the desired area/particle.

“With such neural networks, it becomes possible to make predictions about the system — for example, to estimate what the quark-gluon plasma will look like at a later point in time without really having to calculate every single intermediate step in time in detail,” It will be some time before it is possible to fully simulate atomic core collisions at CERN with such methods, but the new type of neural networks provides a completely new and promising tool for describing physical phenomena for which the current computational capabilities are not at par with the needs of research.

Compiled by-
Hooriah Lodhi 2nd Year

[Source: Studying the big bang with artificial intelligence \(phys.org\)](https://phys.org)

NOBEL PRIZE 2021 WINNER



Syukuro Manabe



Klaus Hasselmann



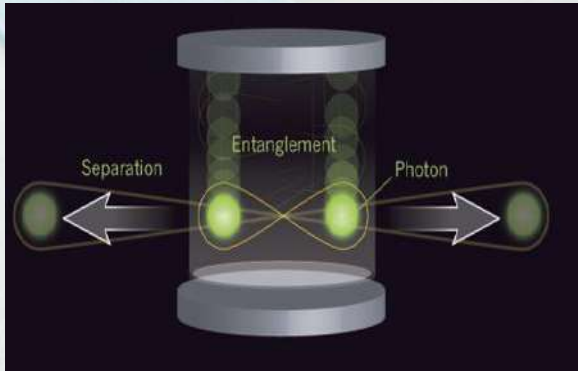
Giorgio Parisi

The Nobel Prize in Physics 2021 was awarded for groundbreaking contributions to our understanding of complex systems with one half jointly to Syukuro Manabe and Klaus Hasselmann for “the physical modeling of Earth's climate, quantifying variability and reliably predicting global warming” and the other half to Giorgio Parisi “for the discovery of the interplay of disorder and fluctuations in physical systems from atomic to planetary scales.” Manabe is a Japanese American climatologist currently affiliated with Princeton University while Hasselmann is a German oceanographer working in Max Planck Institute for Meteorology. Giorgio Parisi is currently associated with Sapienza University of Rome, Italy. Together, their work uses simple theories to explain how random, disordered, and complex phenomena arise and change over time.

Quantum Physics

Quantum Physics has become a necessity of today and we can't overlook it's constant growth in everyday life.

NASA is launching a new quantum entanglement experiment in space



NASA announced that it is launching a mini experiment on quantum entanglement in space later this year. The mission, called the **S**pace **E**ntanglement and **A**nnealing **Q**uantum **E**xperiment (or SEAQUE), is set to test if two entangled photons can remain linked with one another in space. This wacky property of quantum physics could one day connect devices like telescopes and computers together at frequencies that carry information with better resolution.

A photon is a basic unit of light that can behave both like a particle and a wave. Meanwhile, entangled photons would behave like they're connected, regardless of the physical distance between them. That means that even if each photon's properties were measured independently, their results would still be correlated because measuring one photon out of the entangled pair would affect the properties of the other photon—even though those photons are miles apart from one another.

The point of this kind of research is creating and maintaining this entanglement could allow distance-separated quantum systems on the ground, like quantum computers or quantum telescopes, to communicate high-resolution data with one another. A quantum network can be used for secure communications, for programming a quantum computer remotely, and for distributed sensing.

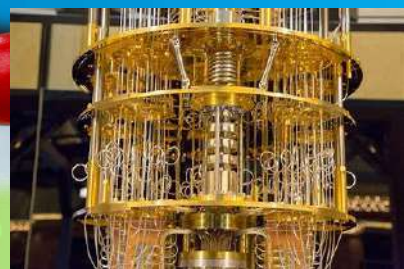
Unlike classical computers, which encode information in binary bits, quantum computers can code information in qubits, which can be 0, 1, or—bizarrely—both at the same time. This property, in theory, would allow quantum computers to solve certain problems like encryption, simulating a quantum system, or searching through an unsorted database, better than classical computers.

But if Quantum computers are a hundred miles apart, connected with optical fiber, it's difficult to get the quantum signals to travel from one to the other because there's loss as it goes through the fiber. When you go a long enough distance, basically, your quantum signals don't make it. "The advantage of trying to close the link from space is that the intensity of light basically falls off, and therefore the loss is much less going through free space than it would be trying to send a signal through fiber."

Compiled by-

Anjali Singh ,1st year

Quantum Computing



Are you the one who scrolls through social media all day? or the one who loves connecting with people on these platforms? Facebook and other social media companies are working on the idea of Metaverse, the new virtual reality platform. So, how are they going to replicate the reality?

Well, here's when quantum mechanics comes to the rescue. The concept of quantum mechanics revolves around photonics, trapped ions, and subatomic particles. Even the laptop you are using is working with the help of quantum computer simulation. Quantum computing helps in attaining super speeds and can easily store large-sized data. 'Metaverse' will be a 3-D virtual environment with simulations achieved with the help of quantum technology. The use of this technology will see a spike in the upcoming years because of its high-speed achievements, ease of processing, and high storage capacity. MIT physicists have discovered a new quantum bit, or "qubit," in the form of vibrating pairs of atoms known as fermions. To make a functional quantum computer using vibrating qubits, the team will have to find ways to control individual fermion pairs - a problem the physicists are already close to solving. These researches in quantum physics-understanding computing and exploring its branches have opened doors for more.



Compiled by-
Manisha, 3rd year

A step towards a unified theory?

The search for a unified theory that can define all the laws of nature is one of the most sought out pursuits in the world of Physics today. A theory that can combine Einstein's general relativity with quantum mechanics, thereby explaining the universe on a large scale as well as the atomic scale, is something scientists have been looking for. It was found by a team of researchers from the Chalmers University of Technology in Sweden and MIT in the US.

It describes the emergence of gravity within a so-called 'holographic' model of the Universe. Such a theory of 'quantum gravity' would include both a macroscopic and microscopic description of nature.

"The challenge is to describe how gravity arises as an 'emergent' phenomenon. Just as everyday phenomena – such as the flow of a liquid – emerge from the chaotic movements of individual droplets, scientists want to describe how gravity emerges from a quantum mechanical system at the microscopic level. Researchers described how gravity emerges from a special quantum mechanical system, in a simplified model for quantum gravity called the 'holographic principle'. They have used mathematical techniques to formulate an explanation for gravity's emergence at the quantum mechanical level.

Such unified description can open up a whole new world of possibilities and can explain mind-boggling stuff like Black holes and dark energy. This small step can help us to comprehend the universe in a whole different light, solving the old mysteries and giving rise to new ones!

Compiled by-
Hooriah Lodi, 2nd Year



Fun time is Fest time...

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presents
SCIRAP
(THE RAP BATTLE)

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Last date of registration: 1 March, 2022
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Khanh: 797609504, Manisha: 9588967642

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• EXPLORATION OF MARS WORTH THE INVESTMENT
• RENEWABLE RESOURCES CANNOT REPLACE FOSSIL FUELS
• EXISTENCE/UNIVERSE ACTUALLY HAVE A BEGINNING
• TIME IS ILLUSION

Last date for registration: 1st March
Date for Competition: 4th March
Timings: 12:00 noon onwards

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For any queries contact:-
Shagun Verma: 797778711
Rishi Yadav: 999646022

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MATCOMANIAC
(Paper Presentation Competition)
THEME: Cosmology and Material Science

Open for all UG, PG and School students
Participation: Single or in pair
Make a PPT on given theme
Narrate it in live session on Google Meet
Can use English, Hindi or both
Can take the help of any research paper

Last date to register: 1 March 2022
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presents
CELESTE'22

Scirap
SCIENTIFIC RAP COMPETITION

Matcomaniac
PAPER PRESENTATION COMPETITION

The Master lens
PHOTOGRAPHY COMPETITION

4th March 2022
10AM onwards

For queries
Deepali: (9671069923)
Shagun: (7017789711)

Register Here: [QR Code]

Dissension
THE SCIENTIFIC DEBATE

Dive into Treta yug
THE RAMAYANA QUIZ

Hedwig Hunt
TREASURE HUNT COMPETITION

Loop O' Mania
CIRCUIT MAKING COMPETITION

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presents
LOOP O' MANIA
The Circuit Making Competition

Last date for registration: 2nd March 2022
Date- 4th March
Time- 2 PM IST

Win exciting prizes!

• Open for all UG and PG students.
• Individual participation.
• No plagiarism is allowed.
• The competition will be conducted in two rounds.

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CELESTE'22
Get ready to
Hedwig Hunt

Join the wizard of Harry Potter

On the Theme:
Harry Potter

Open to all UG, PG and School students
Participation: Single or in pair
Make a PPT on given theme
Narrate it in live session on Google Meet
Can use English, Hindi or both
Can take the help of any research paper

Last date to register: 1 March 2022
Date for Competition: 4 March 2022
Time: 12:00pm onwards

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THE MASTER LENS
Photography Competition
THEME: MACRO LIFE

Registration deadline: 1st March, 22
Submission deadline: 3rd March, 22

Scan and register: [QR Code]

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For further queries contact:-
Divyanshi Saini: 7426832368, Anshika Agarwal: 7895332246

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IN ITS ANNUAL FEST
Celeste'22
presents
Dive into Tretayug
The Ramayana Quiz

There would be three rounds on the basis of different categories

Open for all UG, PG and School students
Participation: Single or in pair
Make a PPT on given theme
Narrate it in live session on Google Meet
Can use English, Hindi or both
Can take the help of any research paper

Last date to register: 1 March 2022
Date for Competition: 4 March 2022
Time: 12:00pm onwards

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The master lens

1st
Prize

2nd
Prize

3rd
Prize

Glimpses...
Inaugural Celeste'22



Men love to wonder, and that is the seed of science - Ralph Waldo Emerson

JEWELS OF OUR CROWN



Bhumija Chaudhary
CGPA 9.581



Ritika Kalra
CGPA 9.514



Kokil Adhikari
CGPA 9.405



Kritika
CGPA 9.405



Tanvi
CGPA 9.378



Sunidhi Rajpal
CGPA 9.365



Nandini Thakur
CGPA 9.324



Simarjeet Kaur
CGPA 9.311



Anushka Sharma
CGPA 9.257



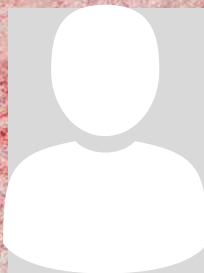
Anjali Mishra
CGPA 9.216



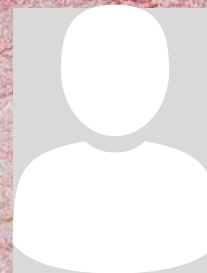
Riya Mittal
CGPA 9.324



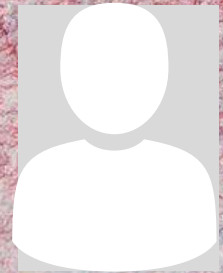
Manya Dawra
CGPA 9.216



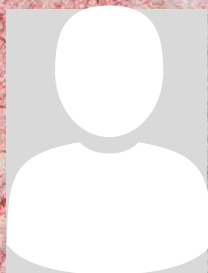
Muskan Arora
CGPA 9.160



Latika
CGPA 9.068



Yashasvee Goel
CGPA 9.041

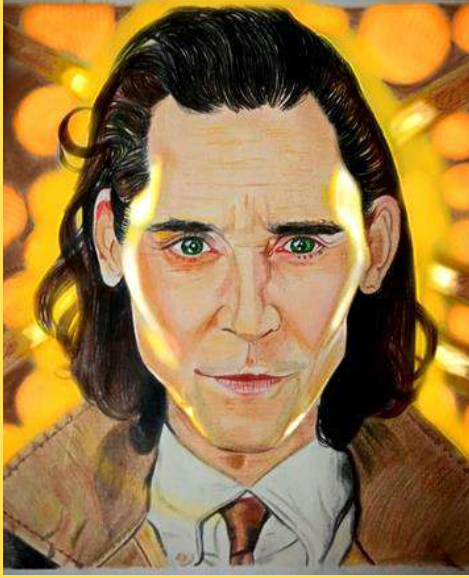


Taniya Sharma
CGPA 9.000



Akshita Pathak
CGPA 9.000

Artista Scribe



Gunjan Mishra

Turbulence

There is something in my heart, which drives me to the past, Wants to take me to the moments when I was a person with a pure heart, And now there is some kind of dust covering my heart, Dust of loneliness, sadness, aggression, Revolving like electrons, Around the nucleus like heart, Still holding the positive part somewhere within, Part of happiness, peace, Staying like protons inside the nucleus bean, Whenever there is some kind of interaction, Between these two opposite parts, One with negative energy, And other with positive charm, A force arises, Creates turbulence, And reaches to the memory box up there, Creates a situation, Where I find myself in the triangle of, Present, future and past, It makes me happy when I memorize my past, It makes me happy when I dream about my future, But when I realize the present, Again there is turbulence in my heart, Why I'm sad with where I'm? Why? Maybe I am so obsessed, Obsessed with the memories of my past, When there was no sign of loneliness, And heart was full of happiness, Obsessed with dreaming about my future, When there is hope in my heart, For living the life, Full of adventurous parts, And when I come back, Again found myself, On this lonely path.

Aditi Chaudhary
3rd year



Neetu Rani

Cry OF Paper

I am the tears of the woods
Necked by others in their greed
I am the messenger of the lower
But I am the only who suffer
I am pinched out again and again

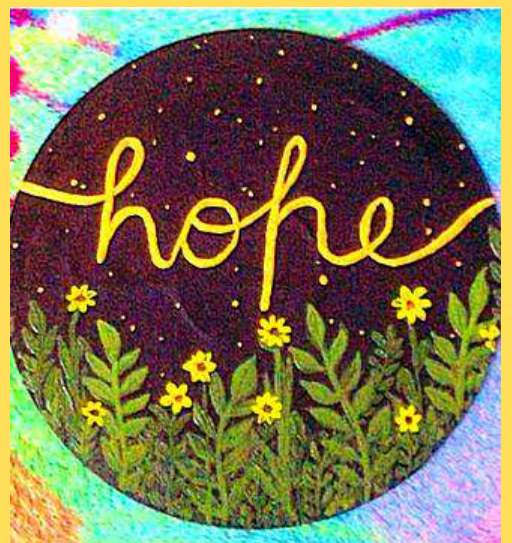
No one feels my heart's strain
All opportunists make use of
All give assuagement to me
Although no one tries to save me yet

But I will try to do my work the best

→ Gunjan



Aman
Verma



Aditi Sharma

Story of chemicals.....

My name is Benzene. My father, Mr. Iron proposed my mother Ethyne, three times and thus I was born.

From childhood I had a crush on Hydroxy. I always felt shy to talk to her. I went to my friend Copper and from his help, we met for the first time. Slowly, our relationship strengthened and we married each other.

Like DeepVeer and Virushka, people called us Phenol as we were very cute couples. Our bond was truly strong and no evils like Water can break us. We were living a happy life. Then came a demon in our society. His name was Zinc. He was the most hated member of the D-Block society where he lived.

They forcefully removed him with two of his friends and thus they entered our area.

Zinc was very handsome. He was so hot that one can never resist herself to bond with him. And hence, my wife fell in his trap. He used to woo her and she was getting triggered everyday. Finally she told me that she wants a break up.

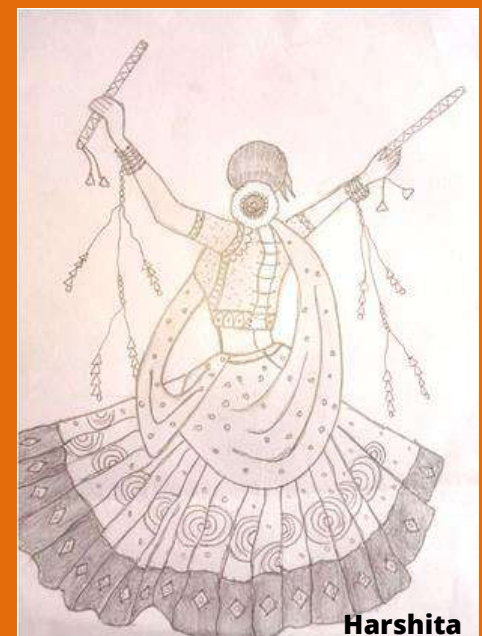
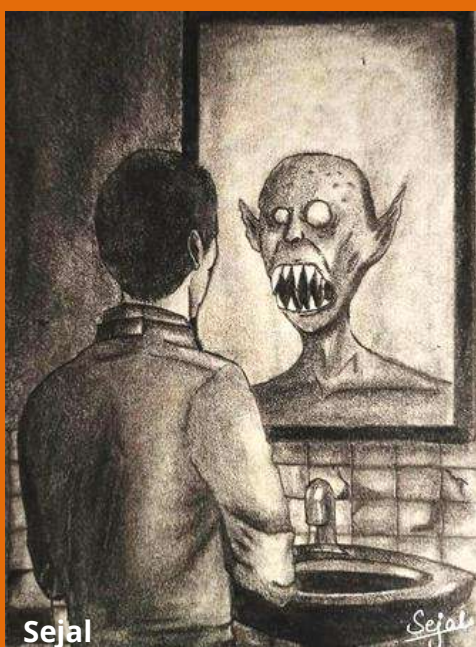
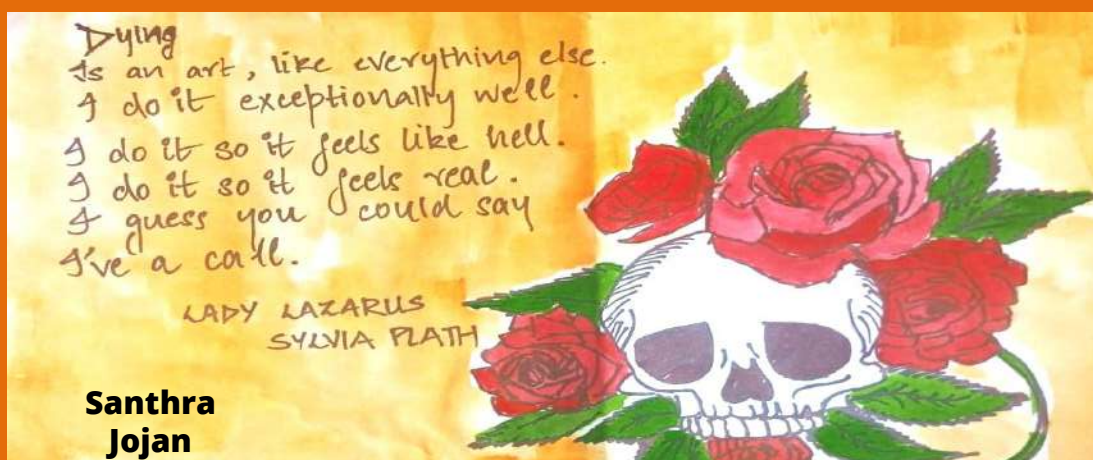
I tried to explain her, but the hotness of Zinc was irresistible. One fine night, our house caught fire. It seemed Zinc's plan to kill me and take away my wife from me. And his plan worked. I got captured inside my house while my wife ran away with him.

Phenol, who used to be, turned Benzene. I was feeling very lonely. But Zinc was not satisfied from all this.

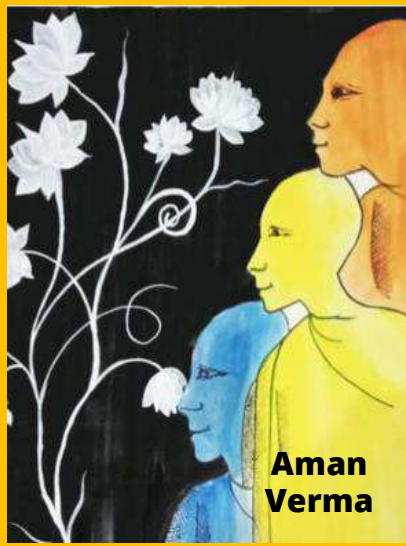
One fine day, he came to my home and added Ozone in the water which I drank. This caused my death.

Now, I'm in heaven and writing this answer

- Ritanshu, 1st Year



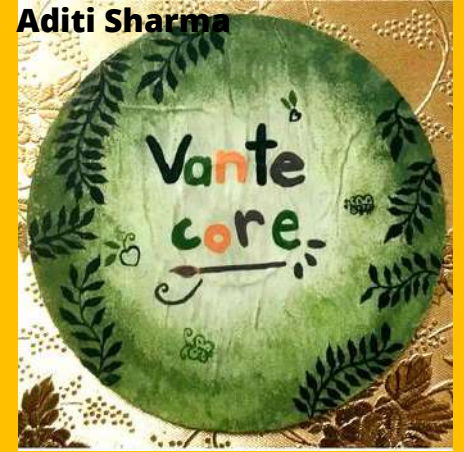
Somewhere, something incredible is waiting to be known- Carl Sagan



**Aman
Verma**



**Ashvineet
Kaur**



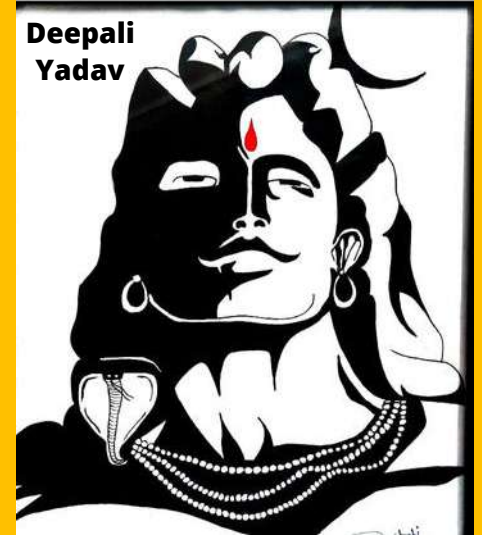
Aditi Sharma



**Aditi
Sharma**



Aashee Sharma



**Deepali
Yadav**

बदल दे तकदीर

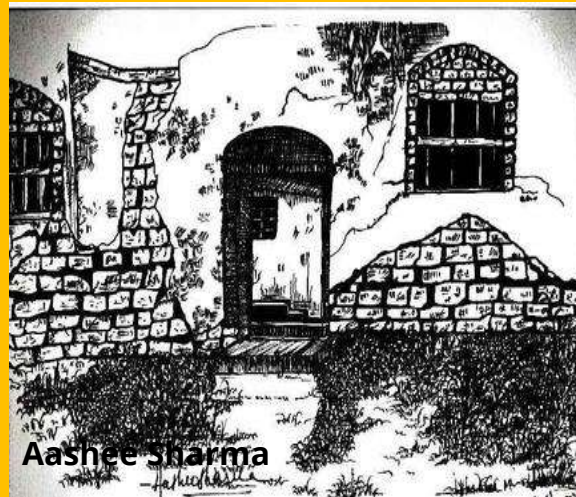
उम्मीद की किरण से, बाँध दे शमा को।
मजबूत इरादों से, लांघ दे आसमां को।।
देख तेरी मंजिल, तेरी राह देख रही है।
आज तू कर फ़तह, खुद के अरमां को।

वक्त है तुम्हारा, वक्त तुम्हीं से बदलेगा।
साध दे लक्ष्य को, पत्थर भी पिघलेगा।
थामकर चलता चल, मन की डोर को।
इस माया नगरी में, तेरा मन भी मचलेगा।

यकीन रख खुद पर, तू खुद का साथी है।
तू तम को हरने वाला, ज्योत की बाती है।
मत खो हौसला को, एक छोटी हार से।
हर हार के बाद, जीत की बारी आती है।।

जो अडिग रहता है, हर मुसीबत में यहाँ।
एक दिन उसी के पीछे, चलती है कारवाँ।
बनकर असि चीरता जा, तू हर तूफ़ान को।
अगर बदलना है कुछ, बदल दे तकदीर को।

Anshupriya



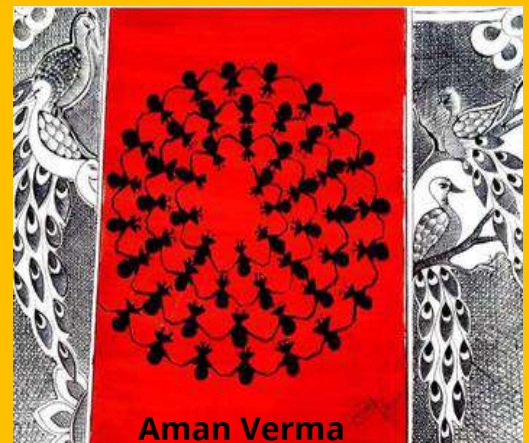
Aashee Sharma



Priyanka



Gunjan



Aman Verma