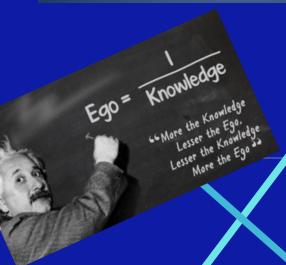


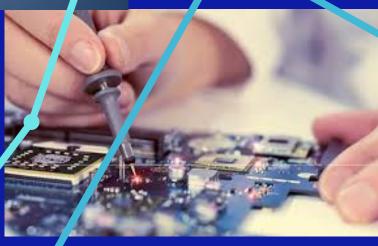
SRUJAN 2023-2024

ELECTRONICS & TELECOMMUNICATION DEPARTMENT









www.jdcoem.ac.in



Electronics and Telecommuication Departmental Magazine

JD COLLEGE OF ENGINEERING AND
MANAGEMENT, NAGPUR
(An autonomous Institute)

Approved by AICTE, NAAC

Khandala ,Post Valni, Near Hanuman Temple,Borgaon Fata, Kalmeshwar Road,Nagpur-441501



A BOU

DEPARTMENT OF ELECTRONICS AND TELECOMMUNICATION

DEPARTMENTAL OBJECTIVE

DEPARTMENTAL VISION

To be a centre providing high quality & globally competent knowledge of current technologies in the field of Electronics and Telecommunication.

DEPARTMENTAL MISION

The department is making its paramount efforts,

- 1. To provide quality teaching learning process through well developed educational environmental hardworking faculties.
- 2. To produce competent technocrats of high standards satisfying the needs of all stakeholders

Special Thanks



TITLE

SRUJAN 2023-2024 JDCOEM, NAGPUR

LANGUAGE

1)Marathi 2)Hindi 3)English

ADDRESS

JDCOEM,Khandala ,Post Valni, Near Hanuman Temple,Borgaon Fata, Kalmeshwar Road,Nagpur-441501

EDITOR

Prof. Harana Bodele
Electronics and
Telecommunication
Department,JDCOEM,Nagpur

From The Principal's Desk



Greetings, Students

As we begin this amazing journey together at our prestigious university, I hope this message finds you all in excellent health and spirits. It brings me great pleasure to welcome each and every one of you to the Electronics and Telecommunication Department as the Principal of JD College of Engineering and Management.

The basis of your engineering education is greatly influenced by the Electronics and Telecommunication Department. It serves as the cornerstone of information around which your future specialized technical skill building will be constructed. This department gives you access to a broad range of courses like VLSI, EMBEDDED, Electronics, Transistors and Digital circuits and many more, giving you a well-rounded education to go along with your engineering studies.

You will have the chance to investigate the fundamental ideas that guide the fields of science and technology during your stay here. Our committed instructors, who are authorities in their domains, will mentor you through the complexities of these courses, making sure that you not only understand the ideas but also get a profound understanding of how they are used in real life. In addition to valuing academic performance highly, we also support overall growth. The Electronics and Telecommunication Department promotes involvement in extracurricular activities, organizations, and society. You can develop your creativity, improve your interpersonal skills, and make friends for life through these channels.

Remember that development is not the only metric for success as you begin this new chapter in your academic career, and rise to the challenges that lay ahead.

Never forget that our staff and faculties are here to help you at every stage of your journey. Please don't be afraid to contact them if you need advice, mentorship, or any other kind of support.

Your experience in the ETC Department will undoubtedly change you, and you'll leave with a solid foundation that will make you stand out as future engineers. Accept the information, accept the experiences, and—above all—accept the spirit of learning.

I'm wishing everyone a fruitful and rewarding academic year!

Regards

Dr. S. V. Sonekar,

JD College Of Engineering and Management ,Principal

From The HOD's Desk



Dear Students

The field of electronics and telecommunication engineering has made significant contributions to both national and global economic development over the last 20 years, as well as to the improvement of human life quality. Ensuring that every student has a good academic environment is the department's main goal. The primary focus is on the students' overall growth in order to mold them into technocrats or techno managers in the working world. The students are exposed to practical information in order to close the knowledge gap between the curriculum and industrial requirements. The department encourages the creation of in-house kits, and we go above and above to ensure that students get more experience designing and building circuits on their own. We now have kits that we built specifically for our labs in electronics, embedded systems, analog circuit design, and electronics devices and circuits. In order to meet the demands of contemporary society, the industry, and the technical education system, the department encourages its researchers and students to do creative research. In order to offer real projects to UG and PG final year students in the fields of DSP, VLSI, Embedded Systems, and Communication Systems, among others, the Department has signed Memorandums of Understanding with a number of firms. Students can participate in workshops, internships, mini-projects, and industrial visits on a regular basis. The department now employs highly skilled academic members who have published research papers in reputable publications and at national and international conferences. They have also made major contributions in a variety of subjects. We also encourage students to participate in a variety of extracurricular and co-curricular activities. Greetings from the Department 📆 Electronics & Telecommunication Engineering. We really hope that you will be able to fully realize your academic and professional potential here.

Dr. Pravin R. Kshirsagar HOD-ETC

Regards

From The Editor's Desk



Cheers ,Students

is gives me immense pride and joy That this was the year which was excellent with respect to contents, Varying articles and information on new technology on digital dentistry. Our current issue is an exclusive edition on technology Next big leap in digital industry. With an aim to create awareness and garner more information about technology application and limitation which we have introduced in this special issue.

I would also like to take this opportunity to extend my heartfelt gratitude to my entire team of the magazine who have strived to bring the best at the forefront.

It takes immense dedication and hard work to assemble article with quality content. My team has done a brilliant job!

We welcome interesting and quality articles for the upcoming issue

Happy Reading, Prof Harana Bodele Magazine coordinator (ETC)



IETE STUDENTS FORUM

The Institution of Electronics and Telecommunication Engineers (IETE) is India's leading recognized professional society devoted to the advancement of science, technology, electronics, telecommunication and information technology. Founded in 1953, it serves more than 70,000+ members through 60+ centers/sub centers primarily located in India (3) abroad). The Institution provides leadership in scientific and technical areas of direct importance to the national development and economy. Association of Indian Universities (AIU), Union Public Service Commission (UPSC) has recognized AMIETE, ALCCS (Advanced Level Course in Computer Science). Government of India has recognized IETE as a Scientific and Industrial Research Organization (SIRO) and also notified as an educational institution of national eminence. The IETE focuses on advancement of electronics and telecommunication technology. The IETE conducts and sponsors technical meetings, conferences, symposium, and exhibitions all over India, publishes technical[1][2] and research journals[3] and provides continuing education as well as career advancement opportunities to its members.

The Institution of Electronics and Telecommunication Engineers

Abbreviation	IETE
formation	1953
Purpose	Professional
	engineering
	education
Headquarters	IETE. 2. Institutional
	Area. Lodhi Road. New
	Delhi, 110003. India
Membership	HF (Honorary Fellow).
	DF (Distinguished
	Fellow). F (Fellow). M
	(Member). AMIETE
	(Associate.by
	examination)
Website	www.iet.e.org 🖸

IETE today is one of the prominent technical institution to provide education to working professionals in India and is fast expanding its wings across the country through its 60+ centres. Since 1953, IETE has expanded its educational activities in of electronics. telecommunications, computer science and information technology. IETE conduct programs by examination, leading to DipIETE equivalent to Diploma in Engineering, AMIETE equivalent to B Tech, and ALCCS equivalent to M Tech. IETE started Dual Degree, Dual Diploma and Integrated programs in December 2011. DipIETE is a three year, six semester course whereas AMIETE is a four year, eight semester course. IETE conducts examination for the above said courses, twice a year once in June and in December. Courses are divided into two sections, Section A and Section B.Courses of IETE are recognized by IISc, IIT, NIT, IIIT, IIM, CMI, TIFR, ISI, IIIT various Central and State Universities.



From The Students Representative

MESSAGES



Mr. Deepak Dahiwale IETE President

Hello.

I Deepak Dahiwale, President of IETE Student Forum, and it is both an honor and a privilege to address IETE forum has been a cornerstone of innovation learning, and community-building for all technology enthusiasts, and I want to express my gratitude to our dedicated members, advisors, and supporters.

Furthermore, our dedication to fostering a strong sense of community has beer a driving force. We've hosted networking events, workshops, mentorship programs, and for the first time we IETE STUDENT FORUM JDCOEM collaborated with IETE YCCE to bridge the gap between academia and the professional world. This has not only enhanced our members' skill sets but also opened doors to promising opportunities.

Looking ahead, I am excited about the possibilities that the future holds. We will continue to adapt to the ever-changing technology landscape and remain a beacon of knowledge and innovation. The IETE Student Forum will evolve grow, and stay committed to its core mission.

Thank you and let's continue this exciting journey of exploration, learning, and growth.

The Vice President of an IETE (Institution of Electronics and Telecommunication Engineers) Student Forum assists the President in organizing events, meetings, and activities for the forum. This role often involves coordinating with other members, managing communication, and contributing ideas to enhance the forum's initiatives.

I wanted to take a moment to express my heartfelt gratitude for the incredible experience I have had as a Vice-president of the IETE Student Forum.

Being a part of this esteemed forum has been nothing short of inspiring, educational, and enriching.

Throughout my journey here, I have had the opportunity to engage in a myriad of activities that have broadened my horizons and deepened my understanding of electronics and telecommunication engineering.

From informative workshops to thought-provoking seminars, every event has been meticulously planned and executed, leaving an indelible mark on my academic and personal growth. The encouragement I have received from fellow members and mentors has been invaluable, instilling in me a newfound confidence to tackle challenges and pursue my passions with zeal.

I am also deeply appreciative of the leadership team, whose dedication and vision have steered our forum towards excellence. Their unwavering commitment to fostering a nurturing environment for learning and innovation is evident in every initiative undertaken. As I reflect on my journey in the IETE



Miss. Khushi Yadav IETE Vice President

FORUM COMMITTE



Mr.Shubham kumbhare IETE Secretary



Mr. Pravesh Khawas IETE Treasurer



Mr. Abhijeet Ambade IETE Documentation Head

Heads



Mr. Sahil Dekate IETE Technical Head



Mr. Tejaswini Bawane IETE Creative Head



Mr. Jay Tete IETE Digital Content Head



Mr. Tejas Rewatkar IETE Discipline Head

FORUM COMMITTE

Co-Heads



Mr.Sharique Hussain



Miss. Sejal Ashtikar IETE Publicity Cohead



Miss. Manasi Landge IETE Event CoHead



Miss. Damini Athawale ETE Creative CoHead



Miss. Yogeshwari Sinha IETE Digital Content CoHead



Mr. Verdant Pohankar IETE Discipline CoHea



Features

Contents

2023-24

CAREER OPTIONS IN ELECTRONICS & TELECOMMUNICATION ENGINEERING (PG 17)

GROWING WITH FUTURE AI (PG 19)

ACADEMIC ACTIVITIES (PG 21)

EXPLORING THE INTERSECTION OF ENGINEERING AND MATHEMATICS (PG 25)

FUN WITH MATHS (PG 18)

PUZZLE (PG 18)

page No.16 **Cover Story:EGO OR BURDEN**

Departmental

- Students Achievements
- **Sports** 24
- **Faculties Achievements** 23
- Alumni News
- 27 Artistie View
- Departmental Activities 21

INDEX

English Section

- 1)Ego Or Burden
- 2)Career Options in Electronics and
- Telecommunication Engineering
- 3)Growing with Future AI
- 4)Exploring the intersection of
- **Engineering and Mathematics**

Hindi Section

परिस्थितिया भी हरा नहीं सकती..(Pg 20)

Marathi Section

का? कुणास ठाऊक (Pg 26)

Art Section

Artistie View (Pg 27)



Toppers 2023-2024(Odd Sem) Electronics & Telecommunication

WINE OF THE STUDENT CGPA YEAR/SEM

Meenal Dhapke 9.64 BE 3rd Semester
Pallavi Harankhede 9.41 BE 3rd Semester

Sharique Hussain 10.00 BE 5th Semester

Nikita Meshram 9.92 BE 5th Semester

Roshani Bhagat 9.90 BE 7th Semester

Sakshi Ambula 9.53 BE 7th Semester

Naaznaan kausar 8.27 BE 7th Semester

Shital Bhade 8.18 M.Tech 1st Semester

Dikshita Badwaik 7.14 M.Tech 1st Semester

Humera Siraj 8.58 M.Tech 3rd Semeste

Aluminies Felicitation-2023-2024 Electronics & Telecommunication



Many students were Department of Telecommunication.

felicitated by the Electronics and



EGO OR BURDEN

There is no heavier burden to bear than a big ego. Let's get over ourselves and get on with it. We're tripping over our own big heads. WE ARE CARRYING THE EGO LOAD WHICH IS UNWANTED. IF WE UNLOAD IT FROM OUR LIFE BOAT THEN IT WILL BE VERY LIGHT AND WILL SAFELY SAIL/NAVIGATE. THOSE WHO FEED YOUR SOUL ARE YOUR BEST FRIENDS AND WHO FEED YOUR EGO THEY ARE THE WORST ENEMIES.

ur ego is our worst and killer enemy.Our ego is planted in the mind and the individual nurtures. It is true that every individual is blessed with qualities that make the individual special in comparison to another. However, that does not necessarily mean that the individual is extraordinary and starkly stands out as a result. When the mind is too full of our win self, that is when ego starts puffing up like a balloon and at the slightest prick or extra inflation it can burst. Till that happens egoistic individual has to carry the burden of his ego, nurtured in the mind, as a burden.

The antidote to ego is humility. This is a quality that can be nurtured with the right upbringing, a pragmatic approach and most importantly the knowledge that 'this too shall pass'. Success, however great is laways transitional. In a similar way, failure is never permanent. If this concept is firmly ingrained in the mind each instructual will relish her/ his success without the success or achievement morphing into ego. Without the ego, an individual will never resent another, she/he will learn to enjoy the moments in we nore fun and live life with gusto. the sun as well as in the shadow and will be lesas

Humility brings to the fore three definite benefits

You are able to take on criticism.

You will not fear mistakes

You will learn to appreciate tho

The Ego in our head is the real ourden we carry!

The ego is a part of is that feeds on thoughts and rational size our psyche (mind, soul, whatever) that cannot understand that our podes, they are just vehicles for more truly are.

Why do so many or us flounder under the weight of their ego? Why is it so difficult for us to concede when we are in the wrong? Why

is it so difficult for us to interact normally with everyone without being conscious of our status or supposed superior

Ego is a gradual process. The ego grew on us. Is it because of the false sense of ego we have nurtured and fostered over the years? Ego feeds on thoughts and rationalization. We're slaves of our thoughts, that's what we are.

Without dispute, we should have a healthy, positive ego, with a legitimate right to believe in what we consider is right, an ego that does not believe in bending before what is wrong, and the "small voice" which whispers to us that we are in the right.

With the courage of conviction, we must be in a position to defend our beliefs and values. Every person is born with a sacred inalienable sense of the self that cannot be shattered or allowed to be humiliated.

Pride has a legitimacy that arrogance does not. When an individual is stripped of his ego, we rob him of his self-respect and decimate his public and private image. It is precisely those who have a positive ego who can respect the ego of another.

Love and compassion places the ego on the back burner and binds every one with that thread of humanity, which differentiates us from the other orders of creation.

The Problem:

Why did we get angry at that person? Why did we get offended when someone challenged an idea we had? Why did we lose our temper when things didn't go according to plan? Why can't we forgive ourselves for past transgressions? These things may have happened because our ego is out of control, plain and simple.

Unnecessary frustration, uncontrolled emotion, taking offens, all of these reactions outwardly scream. I Know better than you, How can you challenge me". This stance is a stance of weakness, ignorance of self, and ego.

Our ego is our enemy. We have the ability to choose to take ownership of our life, our thoughts, and our actions and lead out into greater freedom and depth of experience. Yet, our unchecked ego prevents us from experiencing that freedom because it ca us to lose compassion, place competition over relationship, be overly critical of others, refuse help, and adds stress to our life as

The Solution:

Forgiveness and Self Motivation is the solution over an ego

DO NOT FEED THE EGO BUT THE SOUL. THE MORE YOU ARE EGO-LESS AND SELFLESS, THE MORE YOU LIGHT. YOUR LIFE JOURNEY WILL BE SMOOTH.

Prof Harana Bodele

ETC



Career Options in Electronics & Telecommunication Engineering

This area involves the transmission of information across channels such as an optical fibre, coaxial cable, or free space. This discipline deals with electronic devices and software interfaces majorly.

An Electronics and Communication Engineer can work in Aviation Consumer Electronics, Electricity and Avionics, Manufacturing, Distribution. Communication and Telecommunication, Computer Application, Radio & Television, This discipline integrates knowledge based on the fundamentals of Communication Engineering, Digital Electronics & Logic design, Power Electronics, Signals & Systems, Electronic Circuits, Integrated Circuits, Applied Electromagnetic theory, Control systems, VLSI, and Computer Architecture.

, designing equipment such as routers, multiplexers, switches, electronic switching systems, fiber optics and copper telephone facilities. They develop everyday devices such as transistors and integrated circuits and printed circuit boards (PCBs) too which can be used in computers, cell phones, MP3 players, and television to name a few Analytical Equipment Manufacturing and Offshore Industries.

Now a day's Health care equipment manufacturing is the majorly needed, which is mostly done by an Electronics Engineer.

Prof. Avinash K. Ikhar Assistant Professor, ETC

Fun with Maths.

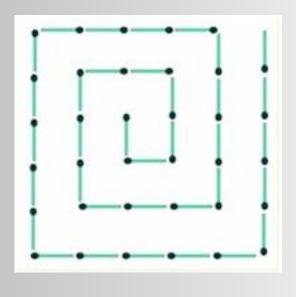
Find the square of multiple 1's.

If there are Two 1's then write in sequence 12 and then write in reverse which is 1 ie,

- 1) 11*11=121,(here 12 for two 1's and write in reverse which is 1) means (121).
- 2)111*111=12321(here 123 for three 1's and reverse which is 21) means (12321).
- 3)1111*1111=1234321(here 1234 for four 1's then write in reverse order which is 321) means (1234321).

PUZZLE

Make perfect 3 squares after moving four matchsticks.
(Answer on pg no.26)





GROWING WITH FUTURE AI

Artificial intelligence (AI) has emerged as a powerful force driving innovation and growth industries. Its transformative potential is evident in various applications, from healthcare and manufacturing to marketing and finance.

Al is predicted to grow increasingly pervasive as technology develops, revolutionizing sectors including healthcare, banking, and transportation. The work market will change as a result of Al-driven automation, necessitating new positions and skills.



Al is the branch of computer science that focuses on creating intelligent machines capable of performing tasks that typically require human intelligence. It encompasses various technologies such as machine learning, natural language processing, and computer vision.

Al can be broadly categorized into two types: Narrow Al, which is designed for specific tasks, and General Al, which has the potential to perform any intellectual task that a human being can do. Examples of Al applications can be seen in our everyday lives, from personal voice assistants like Siri and Alexa to recommendation systems on streaming platforms.

Artificial Intelligence (AI) is transforming the world, and it is no secret that it is the future of growth. Al is a broad concept that involves the use of algorithms and machine learning to analyze data, recognize patterns, and make predictions. It is a tool that enables people to rethink how we integrate information, analyze data, and use the resulting insights to improve decision-making.

One of the main reasons why AI is the future of growth is its ability to automate tasks that were previously performed by humans. This automation not only saves time and money but also increases efficiency and accuracy. For example, AI-powered chatbots can handle customer service inquiries, freeing up human employees to focus on more complex tasks. Moreover, AI can analyze vast amounts of data and provide insights that would be impossible for humans to discover. This analysis can help businesses make better decisions, improve their products and services, and ultimately increase their profitability. For instance, AI can analyze customer data to identify patterns and trends, which can help businesses tailor their marketing strategies to specific audiences.

Another reason is Al-powered tools can help automate routine tasks, freeing up time for employees to focus on more creative and strategic work.

Growth Potential of Artificial Intelligence

The technology has already started to show its potential in various industries, and its impact is expected to increase in the coming years. All has the potential to drive economic growth, create new jobs, and bring about technological advancements that can help businesses stay competitive.

Economic Growth: Technological Advancements, Job Creation, Business Growth, Healthcare, Robotics and Automation, AI in Finance and Banking, Fraud Detection and Prevention, AI in Manufacturing and Automation

Optimizing Supply Chain Management, Collaborative robots (cobots): Al-powered robots can work alongside humans, automating repetitive tasks while ensuring safety and efficiency. Autonomous vehicles and drones: Al enables autonomous vehicles and drones to navigate and perform tasks, enhancing productivity and reducing human intervention.

Prof Sayali Zade ETC

परिस्थितिया भी हरा नहीं सकती...

रास्ते में आएंगी रुकावटें बहुत!!

मगर तू बढ़ते जाना!

रोकेगा ज़माना तुझे!!

पर तू चलते जाना!

जब रहेगी सामने मंज़िल तेरे!!
तो रुकावटों पर नज़र भी नहीं जा पाएगी!

रास्ते हो जाएंगे आसान तेरे!!

जब सपनो में भी मंज़िल नज़र आएगी!

यूँ जमीन पर बैठकर क्यूँ आसमान देखता है, पँखों को खोल जमाना सिर्फ उड़ान देखता है।



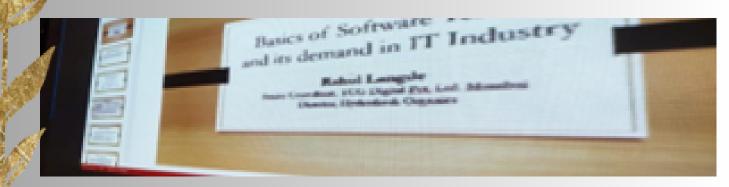
उम्र थका नहीं सकती, ठोकरे गिरा नहीं सकती, अगर जिद हो जितने की तो परिस्थितिया भी हरा नहीं सकती...

-राकेश कुमार मिश्रा



ACADEMIC ACTIVITIES

1. Seminar on basic software Testing and its demand in IT
Industry by Ikhar Sir, 27th Oct 2023
Students and faculties understood about the basic software like
Application Software and System Software.



2. Faculty Development Program on AI/ML trends reshaping the world in 2024 by Harana B ;from 20th to 24th October 2023. You just call artificial intelligence and machine learning magic. As we look back at 2022, it's clear that the field of artificial intelligence (AI) has made some very important strides. From breakthroughs in natural language processing and computer vision to improved adoption of AI by businesses, we've seen several milestones. And so the FDP was conducted. machine learning has emerged as a game-changer in sectors like healthcare, retail, finance, and transportation.

It's no doubt that AI will continue its explosive



3. Poster Competition on Environmental Pollution by Sayli Maam on 18 December 2023; In this competition, ETC tried to alert all to truly focus on art with a purpose and that too a purpose that all should care about environment. The thing is that more we do towards saving the environment, the better the world will be as a result. After all the world is supposed to have been inherited from our ancestors and borrowed from our future generations. Which means keeping the environment clean and safe is our responsibility.



- Activity comprises the promotion, direction, and the coordination of scientific and industrial research in India, including the establishment and funding of certain researchers. To conduct research and developmental studies in environmental science and engineering
- To render assistance to the industries of the region, local bodies, etc. in solving the problems of environmental pollution through S&T intervention
- To interact and collaborate with academic and research institutions on environments
 science and engineering for mutual benefit

To participate in CSIR thrust area and National mission projects



Faculty achievement

Dr.Sanjay. Haridas

- 1)BOS member of
 - a)Electronics board
 - b)Industrial Board
- 2)RRC member of
 - a)RTMNU
 - b)SB Jain Institute of Engineering and Technology

Dr.Pravin Kshirsagar

- 1)Filed 10 Design Patents
- 2) Published 2 SCI papers
- 3)Guided 3 post doctorate students

Prof. Md Hassan

- 1)Selected by DBATU For Nagpur Zone sports Secretory.
- 2)Selected as Organizer/Trainer for RTMNU Kridamahotsav State level tournament

Prof Damodar Tempula

- 1)Qualified GATE Exam
- 2)Qualified UGC /NET Exam

ETC ROCKED IN SPORTS



Once again ETC students achievement reached the height in the field of sports like Cricket and Chess, Mr. Yash is selected in the cricket Team and Miss Saloni Varma selected for the state level in the Chess.

Students were guided and coordinated by Prof.Md.Hassan

Exploring the intersection of Engineering and Mathematics

The bonding of engineering and mathematics representing a harmonious convergence of intellect and creativity. For in its harmonies and equation, we find the melody of innovation and rhythm of progress. As we continue to push the boundaries of human knowledge and imagination, let us remember that at the heart of every engineering Marvel lies the elegant language of mathematics, guiding us towards ever - greater heights of achievement. So let us embrace the elegance of mathematics as both a guiding light and source of inspiration.

-Prof.Afshan Naz Patel



का? कुणास ठाऊक

हरवलं मन पुन्हा शोधावसं वाटतं

अशांत हे मन शांत करावसं वाटतं

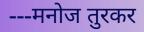
होऊन अपेक्षाशून्य चिंतामुक्त व्हावसं वाटतं

थांबवून धडपड सारी आज स्तब्ध व्हावसं वाटतं

भरल्यापोटी शांत निजावसं वाटतं

आज जन्म आणि मृत्यू अंतर विसरावसं वाटतं

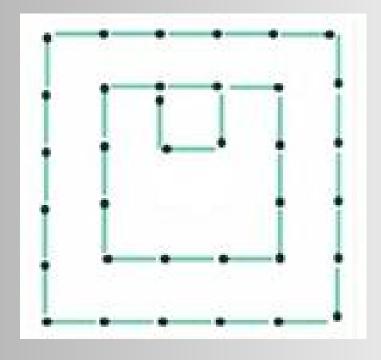
का कुणास ठाऊक आज थोडंसं प्रेम स्वतःवर करावसं वाटतं





ANSWER

The following is the perfect square after moving 4 matchsticks





ARTISTIC VIEW



Palkhi Wankhede 7th sem ETC



Roshani Bhagat 7th sem ETC



Palkhi Wankhede 7th sem ETC



Palkhi Wankhede 7th sem ETC

ARTISTIC VIEW



Rasika vasule 3rd Sem ETC



Roshani Bhagat 7th sem ETC



Simran Tiwari 7th sem ETC



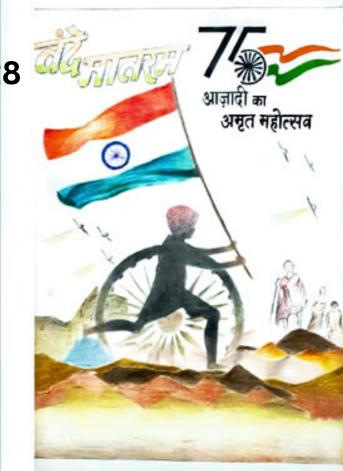
Khushi Yadav 7th sem ETC



Khushi Yadav 7th sem ETC

ARTISTIC VIEW







---Sharique Hussai 5th sem ETC



Prof Akanksha Sontakke



Prof Harna Bodele



Prof Harna Bodele

