



MAGAZINE

2024-2025

EXTC EXPRESS

DEPARTMENT OF ELECTRONICS & TELECOMMUNICATION ENGINEERING

THADOMAL SHAHANI

TSEC

ENGINEERING COLLEGE

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OVERVIEW

The electronics and telecommunications industry is undergoing transformative growth driven by digitalization, connectivity, and shifting global supply chains. Globally, advancements in 5G/6G, semiconductors, IoT, AI, and edge computing are redefining networks, consumer devices, and industrial systems. The telecom sector is expanding beyond traditional voice services into data-centric, value-added offerings, smart infrastructure, and machine-to-machine ecosystems, while electronics underpin innovations across automotive, healthcare, and automation.

India is now one of the world's largest telecom markets with a booming mobile and broadband base, rapidly increasing data consumption and a strong trajectory toward near-universal 5G adoption. Government initiatives like Production-Linked Incentive (PLI) schemes for electronics and telecom gear are catalyzing domestic manufacturing, reducing import dependence and attracting global investment. India aims to significantly scale up semiconductor and component production, aspiring to become a global chip hub.

Emerging opportunities include IoT/AI integration, advanced wireless technologies (6G research), and digital services spanning edge computing, cybersecurity, and green networks. The sector is poised to generate millions of jobs, spur local innovation, and contribute substantially to economic growth, making it a strategic cornerstone of future technological leadership globally and within India.

By: Pooja Kiran Kumar Jain

HOD'S MESSAGE

It is my privilege to welcome you to this edition of the Department Magazine, which reflects the journey and achievements of the Department of Electronics & Telecommunication Engineering over the past year.

This magazine highlights our academic progress, departmental activities, and the collective efforts of our faculty and students. It stands as a testament to the dedication, collaboration, and innovative spirit that define our department.

I would like to emphasize that the department's success is the result of the combined efforts of the teaching staff, non-teaching staff, and students. I sincerely thank everyone who has contributed to the growth and upliftment of the department.

With continued support from the Management, faculty, and students, I am confident that our department will continue to reach new heights.

**Dr. Maniroja Edinburgh
Head of Department**

ABOUT THE DEPARTMENT

Department of Electronics and Telecommunication was established in year 2002 with a clear view of a forerunner in the field of Telecommunications, the Department seeks to evolve towards excellence and adapt itself to the rapid advancements in specialized communication related fields. This Department earlier had nomenclature of Electronics Engineering from 1983 to 2001 with student intake of 120. From 2002 Student intake is 60.

At the desktop of achievements of the department, lies the award of accreditation given by the National Board of Accreditation during 2008 – 2011 and re accreditation from 2016 to 2019. The department has also started PhD. with an intake of 10 students from the academic year 2014-15.

The curriculum of the program has been designed to cater to the ever changing needs and demands of communication industry. The focus is on holistic learning and empowering students to make significant contributions at all levels. The open elective system gives a handful of choices for students to develop expertise in their area of interest such as Neural Networks, Radar engineering, microelectronics, data compression and encryption, Satellite communication and image processing etc. It has one of the best state-of-the-art hard ware and software laboratories with special focus on telecommunication.

B.E. BATCH OF 25



ELECTROVERSE 25



FACULTY



Just like a perfect communication system, the EXTC faculty connect knowledge with application, theory with innovation, and learning with opportunity. They tune young minds to the frequencies of discipline and creativity, amplify confidence, and transmit the skills needed to thrive in a fast-changing technological world. Their classrooms are not just lecture spaces, but launchpads where ideas are engineered, refined, and sent out into the world.

RESEARCH & PUBLICATIONS

Jagtap, S. G. & Kunte, A. S. , “Novel approaches for target parameter extraction with eigenvalue thresholding and Dolph–Chebyshev windowing in multiple-input multiple-output (MIMO) radar system” International Journal of Communication, July 2024



HATODE, Pranali Pradeep; EDINBURGH, Maniroja. Optical coherence tomography angiography image classification and analysis of diabetic retinopathy, using Wasserstein generative adversarial network augmentation. International Journal of Electrical and Computer Engineering (IJECE), [S.I.], v. 14, n. 6, p. 7046-7056, dec. 2024. ISSN 2722-2578. Available at: <<https://ijece.iaescore.com/index.php/IJECE/article/view/35890>>, doi:<http://doi.org/10.11591/ijece.v14i6.pp7046-7056>.

Pranali Pradeep Hatode , Maniroja Edinburg , “OCTA Image Classification and Analysis of Diabetic Retinopathy using WGAN Augmentation”, International Journal of Electrical and Computer Engineering (IJECE), Vol. 99, No. 1, August 2024

Ansari, Nusrat & Edinburg, Maniroja & Nikitha., (2024). A Review of AI-Based Approaches for Suspected Fetal Abnormalities. 10.1007/978-3-031-61471-2_30, Proceedings of 4th International Conference on Artificial Intelligence and Smart Energy (pp.401-411)

N. J. I. Ansari, M. Edinburg and Nikita, "Applicability of Adaptive Noise Cancellation to Fetal Heart Rate Detection Using Phonocardiogram," 2024 International Conference on IoT Based Control Networks and Intelligent Systems (ICICNIS), Bengaluru, India, 2024, pp. 690-697, doi: 10.1109/ICICNIS64247.2024.10823112.

S. Kabra, P. Nadagouda, Y. Nikam and M. S. Kavedia, "Next-Gen Energy Management: IoT Gateway for Smart Monitoring and Appliance Control," 2025 6th International Conference on Mobile Computing and Sustainable Informatics (ICMCSI), Goathgaun, Nepal, 2025, pp. 259-266, doi: 10.1109/ICMCSI64620.2025.10883475.





Bhambure Snehal Vasant, Kavedia Manoj Sheshmal, & Dr. Mahesh Singh Rajput. (2024). "Exploring The Role Of Artificial Intelligence In Human Resources: A Demographic Analysis Approach. Educational Administration: Theory and Practice", 30(3), 4294–4300. <https://doi.org/10.53555/kuvey.v30i3.3621>

M. S. Kavedia and J. N. Shinde, "Improved Reinforcement Learning Model for Traffic Management," 2024 4th Asian Conference on Innovation in Technology (ASIANCON), PimariChinchwad, India, 2024, pp. 1-6, doi: 10.1109/ASIANCON62057.2024.10837974.

Yagnesh Dawankar, Ansh Kumar, Sayam Chavan and Manoj S. Kavedia, "EcoSmart Irrigation: Harnessing Treated Wastewater for IoT Integrated Agriculture", Paper published under CC license (CC BY-NC-ND 4.0) In Proceedings of the 3rd International Conference on Futuristic Technology (INCOFT 2025) - Volume 2, pages 910-916 ISBN: 978-989-758-763-4, DOI: 10.5220/0013607100004664

Dr. Shrishti Bhatia, Kuljit Singh, Yash Shaikh and Varun Patil, "Traffic Monitoring Quadcopter", in International Journal of Innovative Research in Computer and Communication Engineering(IJIRCCE), e ISSN: 2320-9801, Volume 12, Issue 6, June 2024,pp



Dr. Shrishti Bhatia, Jaidutt Kadam, Akash Mishra and Aayush Saraf, "Agriculture Portal", in an International Journal of Recent Engineering Research and Development (IJRERD), ISSN: 2455-8761, Volume 09 – Issue 03, June 2024, PP. 110-117.



A. S. Hatekar and D. Desai, "Hybrid Deep Learning Method for Network Traffic Classification," 2025 12th International Conference on Emerging Trends in Engineering & Technology - Signal and Information Processing (ICETET - SIP), Nagpur, India, 2025, pp. 1-6, doi: 10.1109/ICETETSIP64213.2025.11156534.

A. S. Hatekar and D. Desai, "Internet of Things Traffic Classification Using Hybrid Optimization Algorithm," 2024 International Conference on Artificial Intelligence and Quantum Computation-Based Sensor Application (ICAIQSA), Nagpur, India, 2024, pp. 1-9, doi: 10.1109/ICAIQSA64000.2024.10882181.

Nupur Bodke , Kaniz Fatima Baig ,Aayushi Maurya and Amit Hatekar , "Navigating Project Management: A Comparative Analysis of Agile, Waterfall, and Hybrid Methodologies, International Research Journal of Engineering and Technology (IRJET) Volume: 12 Issue: 01 | Jan 2025 www.irjet.net e-ISSN: 2395-0056

Akshay Hiremath, Amit Hatekar, “ Evaluating IIoT-Based Predictive Maintenance Techniques for Modern Automobiles: A Comparative Survey”, International Journal for Research in Applied Science & Engineering Technology (IJRASET) ISSN: 2321-9653; Volume 13 Issue VII



Kshitij Nirdhar , Amit Hatekar, “ AI-Driven Cyber Threat Detection and Mitigation in 5G and Beyond: Enhancing Security in the Telecom Industry - A Survey and Comparative Analysis, International Journal for Research in Applied Science & Engineering Technology (IJRASET), ISSN: 2321-9653 Volume 13 Issue VII July 2025



J. Kashyap and J. N. Shinde, "Blockchain Method to Improve Security of Medical Certificates and Images in IoT-Enabled Digital Health Care System," 2025 3rd International Conference on Self Sustainable Artificial Intelligence Systems (ICSSAS), Erode, India, 2025, pp. 96-103, doi: 10.1109/ICSSAS66150.2025.11081249.

FACULTY ACCOMPLISHMENTS

NAME	PROGRAM	DURATION
Dr. Maniroja Edinburgh	• AICTE Approved STTP on Machine Learning • Faculty Development Program on AI Agents	4/8/2025 to 16/8/2025 12/05/2025 to 16/05/2025
Prof. Uttara Bhatt	• ISTE approved Online STTP Programme on “VLSI AND SEMICONDUCTORS”	9/12/2024 to 13/12/2025
Dr. Shrishti Bhatia	• STE-approved Faculty Development Program (FDP) on “Geospatial Computing and Applications” • ISTE-approved Faculty Development Program (FDP) on “Exploring Immersive Learning through Augmented & Virtual Reality (AR/VR)” • One-Week ISTE Approved National Level Online Workshop on “Emerging Significance of Artificial Intelligence (AI) across Key Technological Domains such as Blockchain, IoT, Cybersecurity, Big Data Analytics, Cloud Computing & Robotics”	06/01/2025 to 11/01/2025 May 2025 01/07/2025 to 07/07/2025

FACULTY ACCOMPLISHMENTS

NAME	PROGRAM	DURATION
Dr. Shrishti Bhatia	• AICTE Training And Learning (ATAL) Academy Faculty Development Program on Next-Gen Computing in India: Paving the Way for a Digital Future	16/12/2024 to 21/12/2024
Dr. Dhananjay Theckedath	• AICTE Approved STTP on Artificial intelligence	01/09/2024 to 30/09/2024
Prof. Jyoti Kashyap	• AICTE Training And Learning (ATAL) Academy Faculty Development Program on INTERNET OF THINGS AND ITS APPLICATIONS • AICTE Training And Learning (ATAL) Academy Faculty Development Program on INTERNET OF THINGS FOR SUSTAINABLE DEVELOPMENT • AICTE Training And Learning (ATAL) Academy Faculty Development Program on mmWave Technologies	16/12/2024 to 21/12/2024 10/12/2024 to 16/12/2024 13/01/2025 to 18/01/2025

FACULTY ACCOMPLISHMENTS

NAME	PROGRAM	DURATION
Ms. Bharati Ingale	• AICTE Recognized Faculty Development Programme on Scilab Programming for Emerging Areas Applications	03/06/2024 to 07/06/2024
	• AICTE Approved Online FDP on “Scilab Programming for Emerging Areas Applications”	03/06/2024 to 07/06/2024
	• AICTE Approved Online FDP on “Data Analysis of Cyber Attacks through ML and Deep Learning”	25/11/2024 to 29/11/2024
	• AICTE Approved Online FDP on “Applications of AI in Electronics System Design”	02/12/2024 to 06/12/2024
	• 2 day webinar in Generative AI Matermind	14/05/2025 to 15/05/2025
	• Faculty Development Program on AI Agents	12/05/2025 to 16/05/2025
	• 1 week STTP on “Artificial Intelligence Tools for empowered learning in Higher Education”	19/05/2025 to 24/05/2025
	• Data Visualization for Business and Research	26/05/2025 to 07/06/2025
	• Mastering Generative AI: From Basics to Advanced Applications	09/06/2025 to 13/06/2025
	• Exploring Applied Mathematics with MATHEMATICA	07/07/2025 to 11/07/2025

ACADEMIC TOPPERS

SEMESTER VII: DECEMBER 2024



Bhavesh Nanda
520/650



Yash Nikam
516/650



Sayam Chavan
510/650

SEMESTER V: DECEMBER 2024



Vaishnavi Zavare
710/775



Neha Shinde
686/775



Ananya Yadav
685/775

SEMESTER III: DECEMBER 2024



Shreya Sawant
663/750



Suyash Shirsat
662/750



Shravan Kundap
660/750

SEMESTER I: DECEMBER 2024



Suraj Gupta
688/800



Samaira Gupta
670/800

SEMESTER VIII: MAY 2025



Ansh Kumar
506/600



Yash Nikam
516/600



Yagnesh Dawankar
495/600

SEMESTER VI: MAY 2025



Vaishnavi Zavare
694/750



Ananya Yadav
667/750



Vaidehi Purohit
666/750

SEMESTER IV: MAY 2025



Suyash Shirsat
715/775



Shreya Sawant
709/775



Shravan Kundap
707/775

SEMESTER II: MAY 2025



Aditi Singh
629/750



Suraj Gupta
627/750

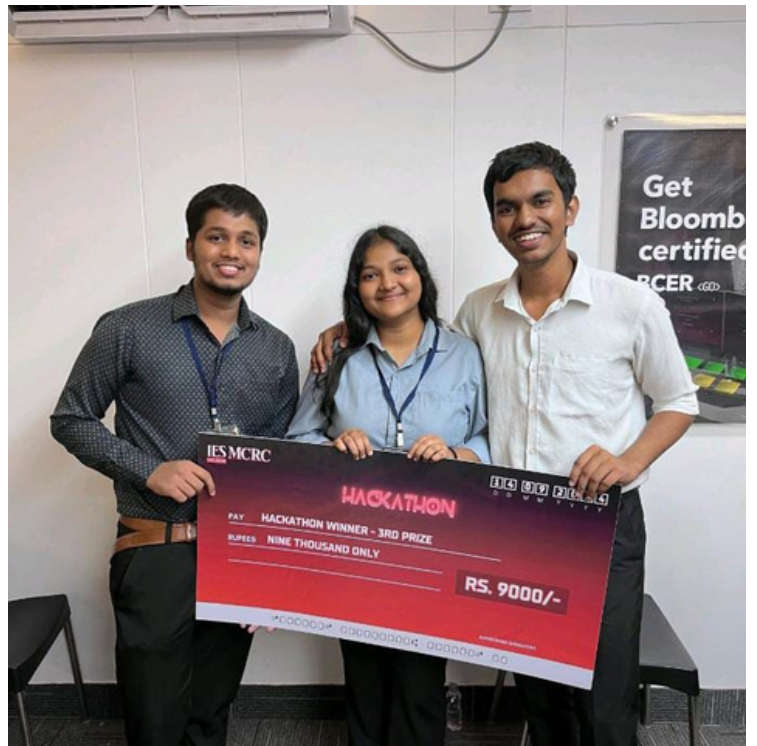
ACHIEVEMENTS

HACKATHON WINNERS



Devesh Shelatkar,
Pranav Amritwar,
Janhavi Chaudhari,
Sumit Chhajed secure
3rd position Developing
IOT BASED Smart
Helmet to Enhance the
Delivery Workforce
Safety

**Rupsana Khatun and
group** secure 3rd
position in IES
hackathon'25 n
infographic poster on
EV market growth and
PowerBI dashboard on
market analysis using
dataset from kaggle.



WINNERS



Rupsana Khatun and group secure 3rd position in IES hackathon'25 For PowerBI dashboard on business analysis using dataset from kaggle.



Prashant Sharma Rishabh Dave Karan Mondal Deepak Mehta Rahul Jain Simran Koban, secure 3rd Prize in SIH Internal Hackathon 2025 and were waitlisted for SIH 2025 Finals. Presented: An AI-powered platform for autonomous infection detection, precision spraying, and real-time soil monitoring. It features cm- level navigation and remote dashboard control for optimized crop management.

CONTIGENT WINNERS



Aarchi Choukekar, Sumit Rangwani and their team '5 6 7 GO' , secure 1st Prize in Shah and Anchor Kutchhi Engineering College and Dr Bhanuben Mahendra Nanavati College of Home science. They also secured 2nd Prize in Vidyalankar Institute of Technology.

CONTIGENT WINNERS



Hasan Ansari, Rishav Gupta, Deepak Notank and the TSEC DRAMA TEAM 'Masiha', secure 1st prize in Valia College of Arts, Commerce and Science. They also secure 2nd prize in IIT Gandhinagar and KJ Somaiya Institute of Management.

CONTIGENT WINNERS



Shouryah Bali and the TSEC Band Team,, secure 1st prize at Bunts Sangha College, Mumbai and represented the college in many other competitions.

CREATIVE CORNER

The One Thing Left Uncoded

- Saumya Sinha S.E

It's a tale from far ahead in time,
From a lab where they are trying to save mankind,
With a plan that allows no error margin—
Training emotions into robots,
Preserving existence in a lifeless being.

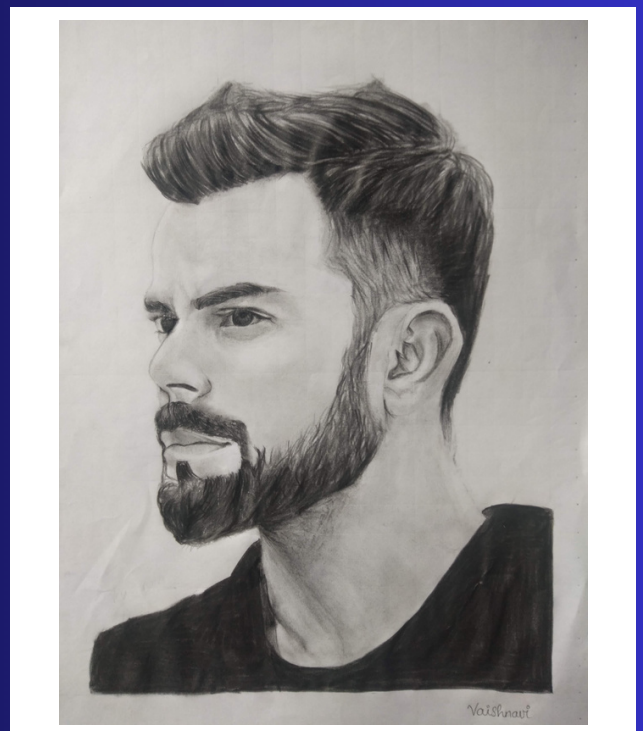
Where every smile is reduced to a pattern,
And grief leads only to calibration.
Love remained the one thing unable to teach,
Something that cannot exist without miseries.

The feel of hands held in hands
Cannot be trained by any command.
The voice you can never forget
That sends you straight into memory reset.

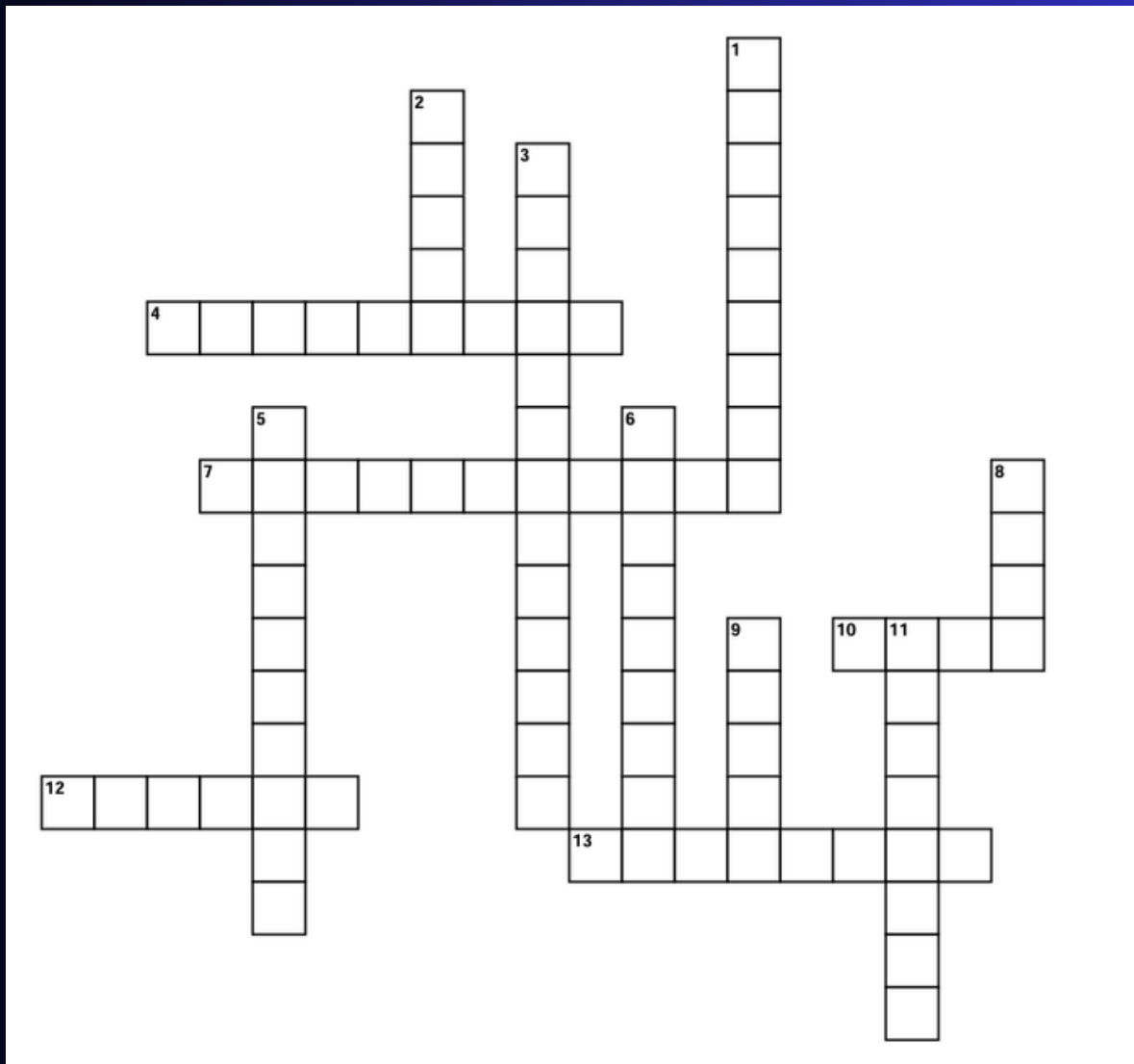
In the end, latency appears
Where there should have been precision,
Proving there is no algorithm
Capable of recreating emotion.

Portrait Sketch - Virat Kohli

- Vaishnavi Zavare B.E



CROSSWORD



Across

[4] The number of cycles per second in an ac sine wave.

[7] An inductive electrical device for changing the voltage levels of ac system

[10] The _____ constant is said to be reached at 63.2% of the response for a rc circuit

[12] The reference voltage that is usually assumed to be at zero potential

[13] A _____ loop is one where a part(or all) of the output is is given as input back to the system

Down

- [1] A passive component that can store energy in the form of an electric charge
- [2] A semiconductor device that essentially acts as a one way switch for current
- [3] Kind of electricity that is due to build up of charged particles
- [5] A period of disturbance in a circuit before reaching steady state for a momentary periods of time
- [6] Measure of opposition in an ac circuit
- [8] A junction where 2 or more elements connect
- [9] The electrical _____ is the normalized electrical force applied to a unit test charge
- [11] A passive component that is used in most power electronic circuits to store energy in the form of magnetic energy when electricity is applied to it

Answers:

Across: FREQUENCY ,TRANSFORMER ,TIME ,GROUND
,FEEDBACK

Down:CAPACITOR,DIODE,ELECTROSTATIC,TRANSIENTS,IMPEDANCE,NODE,FIELD, INDUCTOR

WHO AM I ?

I store electrical energy in an electric field and my unit is the farad.

Ans: _____

I am a semiconductor device with three terminals and I am commonly used for switching and amplification.

Ans: _____

I am the process of varying a carrier signal according to the information signal.

Ans: _____

I represent the range of frequencies that a communication system can transmit.

Ans: _____

I allow multiple signals to share a single communication channel.

Ans: _____

GOLD MEDALIST'25

Hello respected faculty members, dear friends, and my fellow students.

I am truly honored and grateful to receive the Gold Medal for the academic year 2024–2025 at TSEC, as a student of the Department of Electronics and Telecommunication Engineering. This recognition is a deeply humbling moment in my journey.



This achievement would not have been possible without the guidance, patience, and encouragement of our respected teaching and non-teaching faculty members. Beyond academics, they guided us in becoming thoughtful, grounded individuals, preparing us for the real world long before we stepped into our professional roles. I am sincerely thankful to the department for providing such a strong academic environment that fostered not only technical excellence, but also personal growth and confidence.

I am equally grateful to my friends and my family, whose support, belief, and shared struggles made this journey meaningful. Engineering is never an individual effort, it's built through shared stress, late nights, group projects, failures, laughter, and growth. The people around me made this journey meaningful, and I carry their support with me today.

To my juniors and classmates, I would like to say this: consistency matters more than intensity, and awareness matters as much as effort. Engineering is not just about marks, but about learning how to think clearly, solve responsibly, and grow every single day. Stay industry-aware, build strong foundations, and shape yourselves intentionally for the future, because today's engineers are not just problem solvers, but contributors to how technology transforms society.

I feel immensely proud to be a part of the EXTC department and Thadomal Shahani Engineering College. This place has offered me far more than lessons, it has nurtured my growth, confidence, and given me memories I will hold close always..

I'd like to share a quote that inspires me, often attributed to Henry Ford: "Whether you think you can, or you think you can't - you're right." It serves as a reminder that skills may give you a beginning, but your mindset, discipline, and integrity decide how far you go.

Thank you to everyone who has been a part of this beautiful journey.

Warm regards,
Naisha Samir Mazgaonkar
Gold Medalist- EXTC (2024–2025)

MAGAZINE TEAM



As we bring this edition of EXTC Express (2024–2025) to a close, we take a moment to reflect on the journey that brought these pages to life. This magazine stands as a testament to the creativity, intellect, and diverse voices that define our department.

Through a blend of insightful articles, creative expressions, and thoughtful perspectives, this edition has aimed to capture not just ideas, but the spirit of our students and faculty. Each contribution has added depth and meaning, making this compilation truly special.

We extend our sincere gratitude to all our contributors for sharing their work and to our faculty advisors for their constant guidance and support. Their encouragement has been instrumental in upholding the quality and vision of this publication.

As you turn the final pages, we hope this edition leaves you inspired, informed, and connected to the vibrant community we are proud to be a part of. Your feedback and support continue to motivate us to grow and evolve with every issue.

Thank you for being a part of this journey.

**Warm regards,
The Magazine Team**