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INSTITUTE OF INFORMATION TECHNOLOGY
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ADDING VALUE TO ENGINEERING
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DEPARTMENT OF ELECTRONICS & TELECOMMUNICATIONS

SPACE IN
EVERY CHIP

TELESCAN

ASTROSPHERE

COSMOS ABOVE, CIRCUITS WITHIN

"Where Satellites Soar and Semiconductors Shine"

September 25 / Volume 15

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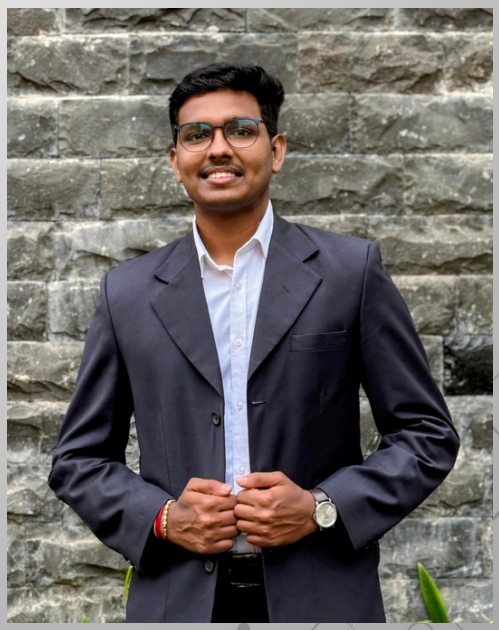

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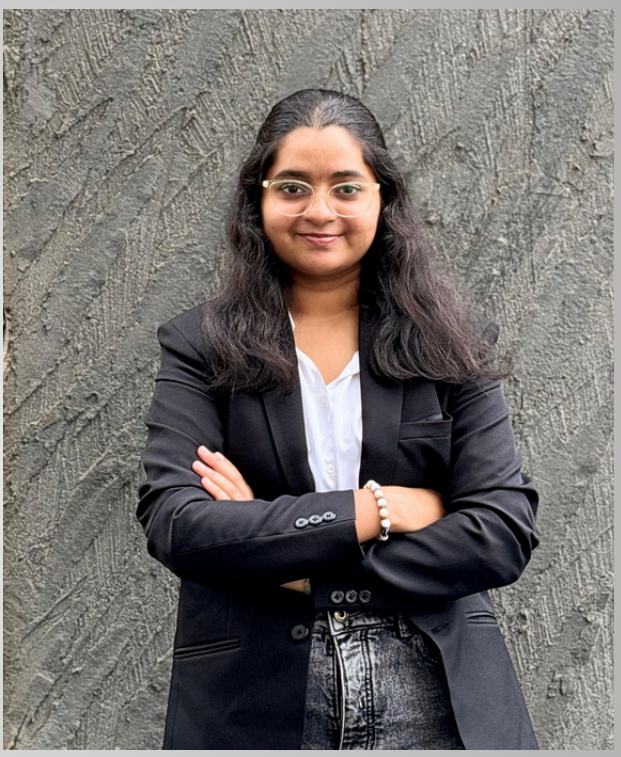


Rasika Akhare
SY-A

This edition of TELESCAN 25-26 would not have been possible without the relentless dedication and hard work of our incredible team, who have poured their hearts and souls into bringing you a glimpse of the incredible creativity of our department.

We extend my heartfelt gratitude to our faculty co-ordinators, **Dr.Harshada Magar** for her support and guidance, our Head of Department, **Dr. M. S. Vanjale** for her vision and encouragement, and our Principal, **Dr. P. B. Mane** for fostering an environment where creativity and knowledge flourish.

“Astrosphere” is more than just a magazine; it is a journey through the kaleidoscope of India's history, traditions, and contemporary marvels. We hope these pages offer you a deeper understanding of our beloved nation and inspire you to explore its myriad wonders.

Thank you for being a part of this incredible journey, and we invite you to immerse yourselves in the pages of “Astroshpere” – a testament to the Unique India we are so proud to call home.

VISION

To be one of the renowned Electronics &Telecommunication Engineering programmes imparting quality education by promoting professionalism, values and ethics leading to a progressive career in industry & academia globally.

MISSION

1. **To boost employability/entrepreneurship/higher studies through value-added activities.**
2. **To inculcate research attitude and professional ethics for addressing the needs of industry.**

Programme Educational Objectives (PEOs)

PEO1: Engage in solving problems in the E&TC domain by developing products/offering services to cater to the needs of the society.

PEO2: Work in diverse career fields of information and communication technology.

PEO3: Develop new methodologies and technologies for solving real-life problems.

Programme Specific Outcomes (PSOs)

PSO1: Apply domain-specific knowledge to analyze, design and develop electronics and telecommunication systems/applications in the field of Embedded Systems, Very Large-Scale Integration (VLSI), Internet of Things (IoT), and Communication Technology.

PSO2: Select and apply software and hardware tools such as Electronic Design Automation (EDA) and Test/Measurement equipment to solve engineering problems.

Programme Objectives (POs)

Graduates will be able to:

1.Engineering knowledge:Apply the knowledge of mathematics, science, engineering fundamentals, and an engineering specialization to the solution of complex engineering problems,

2.Problem analysis :identify,formulate, research literature,and analyse complex engineering problems. reaching substantiated conclusions using first principles of mathematics, natural sciences, and engineering sciences.

3.Design/development of solutions:Design solutions for problems and design system components or processes that meet the specified needs with appropriate consideration for the public health and safety,and the cultural ,societal ,and environmental considerations.

4.Conduct investigations of complex problems: Use research-based knowledge and research methods including design of experiments, analysis and interpretationof data,and synthesis of the information to provide valid conclusions,

5.Modern tool usage: Create ,select ,and apply appropriate techniques resources, and modern engineering and ITtools including prediction and modelling to complex engineering activities with an understanding of the limitations.

6.The engineer and society:Apply reasoning informed by the contextual knowledge to assesssocietal ,health ,safety ,legal and cultural issues and the consequent responsibilities relevant to the professional engineering practice.

7.Environment and sustainability: Understand the impact of the professional engineering solutions in societal and environmental contexts,and demonstrate the knowledge of,and need for sustainable development.

8.Ethics: Apply ethical principles and commit to professional ethic sand responsibilities and norms o fthe engineering practice.

9.Individual and team work:Function effectively as an individual,and as a member or leader indiverse teams,and in multidisciplinary settings.

10.Communication:Communicate effectively on complex engineering activities with the engineering community and with society at large, such as, being able to comprehend and write effective reports and design documentation ,make effective presentations ,and give and receive clear instructions.

11.Project management and finance: Demonstrate knowledge and understanding of the engineering and management principles and apply these to one's own work,as a member and leadering team, to manage Projects and in multi disciplinary environments.

12.Life-longlearning: Recognize the need for,and have the preparation and ability to engage in independent and life-long learning in the broadest context of technological change.

Dear Readers,

Ashtrosphere can be envisioned as a central domain where astronomy, space science, and cosmic exploration converge. The term blends "Ashtro" (derived from astronomy/astrophysics) with "sphere", symbolizing a boundless space of ideas, innovations, and collaborations. Together, it suggests a dynamic environment where the universe and human ingenuity meet.

This concept applies to:

Knowledge hubs: Ashtrosphere represents platforms where disciplines like astrophysics, space engineering, satellite technology, and cosmology intersect. These hubs act as incubators for discovery, driving research and innovation that expand our understanding of the universe.

Global events and forums: Just as expos and conferences fuel electronics, gatherings under the Ashtrosphere umbrella bring together scientists, researchers, space agencies, startups, and visionaries. They showcase breakthroughs—from telescope technology to planetary missions—while fostering international collaboration.

Interdisciplinary integration: At its core, Ashtrosphere emphasizes the interconnectedness of diverse fields—astronomy with AI, astrophysics with quantum research, space tech with sustainability. This synergy accelerates advancements, creating technologies and theories that reshape how humanity explores and interacts with the cosmos.

Warm regards,
TESA Editorial 2025-26

TABLE OF CONTENTS

Harmoni Tech Spectrum

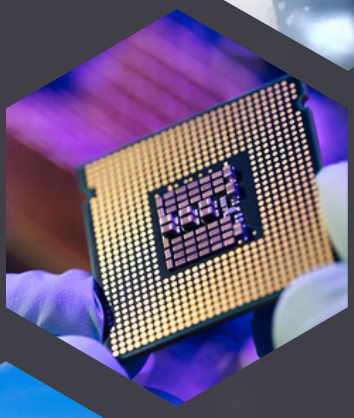
TABLE OF CONTENTS

Poetry Section

India 2025 Quiz

Canvas Chronicles

Harmoni Tech Spectrum



The Perfect Pair: How India's Chip and Space Plans Help Each Other

India is launching rockets into space and now plans to create its own computer chips. While these ambitions seem separate, they are deeply connected. This is the story of how these two critical missions fuel each other's journey to success.India is working on two big dreams. The first is to become a bigger player in space science, with missions to the Moon, the Sun, and even sending humans to space. The second is to start making its own computer chips, which are the tiny brains inside every electronic device. While they seem separate, these two missions are deeply connected. They need each other to succeed.

Why Space Needs Chips

Think of a satellite or a rocket. It needs to be smart. It has to navigate, communicate with Earth, and run experiments. All of this is done by computer chips. Space is a harsh place with extreme radiation and temperatures. Normal chips from a smartphone would stop working. They need special, super-tough “radiation-hardened” chips. Right now, India often buys these from other countries. This can be expensive, create delays, and isn't ideal for national security. For India’s space goals to be truly self-reliant, it needs a secure supply of these special chips.

How the Semiconductor Mission Helps

This is where India’s Semiconductor Mission comes in. The government is offering money to companies to build factories to make chips inside India. While these factories will first make common chips for cars and phones, they can be guided to also make the special chips that the space sector needs.

Having a local chip maker is a huge advantage for India’s space agency, ISRO, and for new private space companies. It means they can get chips faster and cheaper. It also means they don’t have to worry about international politics stopping a crucial chip delivery. The space industry could become a strong and reliable customer for India’s new chip factories, helping them grow.

How Space Helps the Chip Mission

Building a chip factory costs billions of dollars. Companies need to be sure they will have enough customers to buy their chips. The Indian space industry, which is growing fast, can be one of these key customers. By promising to buy a certain number of chips, ISRO can give chip companies the confidence they need to set up shop in India. This makes the semiconductor mission less risky for businesses.

Furthermore, the extreme needs of space push technology to its limits. Designing chips for rockets forces engineers to be more innovative. The skills they learn can then be used to make better chips for other areas like medical devices or self-driving cars, improving the entire tech industry.

India's Semiconductor Mission and its space ambitions are a perfect team. The space program provides a strong reason and a ready customer for making chips at home. The chip mission, in return, provides the critical parts needed for space exploration to be safe, secure, and successful. By working together, these two missions can make India a true global leader in technology, ensuring that its biggest projects are built on a foundation made in India.

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1.India Semiconductor Mission (ISM) official website (https://www.ism.gov.in/)
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By
Suprriya Lohar
Assistant Professor

Beyond the Sky: Celebrating Space Day on 23rd August

ISRO's Legacy in Space

- 1975: Aryabhata – India's first satellite.
- 1980: Rohini – first satellite placed in orbit by an Indian rocket (SLV-3).
- 2008: Chandrayaan-1 – confirmed water molecules on the lunar surface.
- 2013: Mangalyaan – Mars Orbiter Mission; India became the first Asian nation to reach Mars orbit.
- 2023: Chandrayaan-3 – historic lunar south pole landing

National Space Day

On 23rd August 2023, India created history. The successful landing of ISRO's Chandrayaan-3 on the unexplored lunar south pole marked a defining moment in global space exploration. For the first time, humanity touched this challenging region of the Moon, proving not only India's technological excellence but also the power of vision, perseverance, and teamwork. To honor this achievement, 23rd August is celebrated as National Space Day — a day that inspires us to dream beyond boundaries.

Space Day is not merely about looking back at a single mission; it is about celebrating the spirit of exploration that drives human progress. Every satellite in orbit improves our communication, navigation, weather prediction, and disaster management. Every spacecraft that journeys outward represents countless hours of engineering — from electronics and propulsion to robotics, materials science, and data analytics. For engineering students, this day is a reminder that the classroom concepts we study are the very foundations of tomorrow's breakthroughs.

A Call to Action

As we celebrate Space Day on 23rd August, let us carry forward the legacy of Chandrayaan-3. Let us dare to ask bold questions, build ambitious projects, and believe that our efforts here on campus can one day echo in space. At our college, the Antrish Club embodies this spirit of discovery. The club organizes model-rocket launches, astronomy observation nights, space-themed quizzes, hands-on projects, and expert talks, providing students with opportunities to apply their learning beyond textbooks.

By joining Antrish, you do not just celebrate space — you engineer it. The club nurtures innovation, teamwork, and curiosity, qualities that define every successful scientist and engineer.
“The sky is not the limit; it is only the launchpad.” 🚀

Dr. Varsha K. Patil
Staff coordinator Antrishk Club

Gaganyaan G1: India’s First Step to Human Spaceflight

India has always dreamed big in space. From Aryabhata in 1975 to Chandrayaan-3’s successful lunar landing, ISRO has consistently pushed boundaries. Now, the nation is preparing for one of its most ambitious ventures yet — Gaganyaan, India’s first human spaceflight mission.

Before astronauts take flight, ISRO will conduct a crucial trial called Gaganyaan G1, planned for December 2025. This uncrewed mission will carry a humanoid robot named Vyommitra, whose role is to simulate how humans would behave in space.

Vyommitra is not just a dummy. She can monitor cabin conditions, operate panels, and even communicate with mission control. The data she gathers will help ensure that life-support systems, safety mechanisms, and re-entry procedures all work perfectly before Indian astronauts are on board.

The G1 mission will validate vital technologies such as the crew escape system, oxygen and pressure regulation, and safe landing through parachutes. If successful, it will pave the way for India to join an elite group of nations — currently, only the USA, Russia, and China have independently sent humans into space.

For students of electronics and communication, this mission is especially inspiring. It highlights how fields like robotics, chip design, avionics, and communication systems are directly linked to real-world space achievements.

Gaganyaan G1 is more than a test flight. It is a symbol of India’s bold ambition and a message to the world that the country is ready to take its place among the stars.

Soham wanzkhade

T.Y-B

India's Human Spaceflight Roadmap: The Journey Beyond Gaganyaan

India's space programme has always been about bold visions. After the success of Chandrayaan and Mangalyaan, ISRO is now focused on its most challenging goal yet — sending Indians into space. This dream is coming alive through the Gaganyaan mission, but the roadmap goes far beyond one flight.

The mission begins with two uncrewed test flights, the first being Gaganyaan G1 with the humanoid Vyommitra. Once these succeed, ISRO will launch the first crewed flight, carrying two to three astronauts into low Earth orbit for about a week. This historic milestone will place India among the world's few human spaceflight nations.

But ISRO's plans do not stop there. The government has already announced that by 2035, India aims to build its own space station — a permanent laboratory in orbit where Indian astronauts can live and work. This will allow advanced research in materials, medicine, and electronics in microgravity, while also giving India strategic independence in space exploration.

Alongside, India is preparing for ambitious projects like Chandrayaan-4 (sample return mission from the Moon), deeper planetary exploration, and even the possibility of crewed missions to the Moon in the longer future. Each of these steps builds on the technologies tested through Gaganyaan.

For students and young engineers, this roadmap is not just a national achievement, but also a career opportunity. Human spaceflight depends heavily on electronics, robotics, semiconductors, communication systems, AI, and advanced materials. The skills learned in classrooms today could directly contribute to astronauts' safety tomorrow.

India's journey from Aryabhata to Gaganyaan proves one thing — dreams backed by determination become reality. The roadmap of human spaceflight is a promise that the next generation of Indians will not only study the stars but also travel among them.

Rupam Patil

S.Y-B

Parachute Recovery System: Ensuring Astronaut Safety in Gaganyaan

Every space mission is exciting, but human spaceflight adds one non-negotiable factor — safety. For India's Gaganyaan mission, one of the most crucial systems is the parachute recovery system, which ensures astronauts return safely to Earth.

When the Gaganyaan crew module re-enters the Earth's atmosphere, it faces extreme heat and speed. After re-entry, the module must slow down before landing in the sea. This is where the parachute system takes over. A carefully designed sequence of drogue and main parachutes deploys in stages, reducing speed from supersonic levels to a safe splashdown.

ISRO, along with the ADRDE (Aerial Delivery Research and Development Establishment), has been testing this system extensively. In August 2022, they conducted a successful drop test in Tamil Nadu, where a dummy crew module was released from a helicopter at high altitude. The parachutes deployed perfectly, demonstrating the reliability of the design.

The system itself is massive. Each parachute is made of advanced fabric capable of withstanding high stress. The entire setup includes 10 parachutes—pilot, drogue, and main—working in perfect sequence. Even if one fails, backups ensure safety. This redundancy is critical when human lives are at stake.

Why does this matter for students and engineers? Because the technology involves aerospace engineering, mechanical design, textiles, electronics, and sensors. The deployment sequence is controlled by onboard electronics that detect altitude, speed, and pressure, triggering parachute release at the exact right moment.

The success of these tests brings India closer to its first human spaceflight. For the public, it builds confidence. For the engineering community, it shows how precision, innovation, and safety engineering come together to solve real-world challenges.

The parachute recovery system is not just fabric and ropes — it is a symbol of India's seriousness about astronaut safety. As Gaganyaan prepares for launch, these silent heroes of engineering will make sure the mission ends with a safe homecoming.

Prerna Yadav

S.Y-B

Aditya-L1 Solar Mission – One year of results and SUIT instrument.

India took a giant leap in space science with the launch of Aditya-L1, its first solar observatory, in September 2023. Positioned at the Lagrange Point-1 (L1), about 1.5 million km from Earth, the mission was designed to study the Sun continuously without Earth's shadow interfering. After completing its first year, Aditya-L1 has already started reshaping our understanding of the Sun.

The Role of SUIT

Among its seven payloads, the Solar Ultraviolet Imaging Telescope (SUIT) is one of the most significant. SUIT observes the Sun in the ultraviolet spectrum, capturing high-resolution images of the solar disk. This data helps scientists study the Sun's outer layers, its radiation patterns, and how solar activity affects Earth's atmosphere and satellites.

Key Findings in the First Year

In just one year, Aditya-L1 has provided valuable data on:

Solar flares and coronal mass ejections – crucial for predicting space weather.

Ultraviolet variations – SUIT revealed subtle changes in solar radiation that directly influence Earth's ionosphere.

Space weather forecasting – the mission's real-time monitoring strengthens India's ability to protect satellites, navigation, and communication networks.

Looking Ahead

Aditya-L1 will continue operating for at least five years, offering continuous insights into solar storms, radiation, and space weather. Its findings are not only pushing India's scientific boundaries but also ensuring technological resilience in communication, navigation, and defense systems.

In just one year, Aditya-L1 has established India as a key global contributor to solar research, proving that the nation's space science is truly shining bright.

Avdhut Polekar

S.Y-B

XPoSat – India's First Dedicated X-ray Polarimetry Mission

India entered a new era of astrophysics with the launch of the X-ray Polarimeter Satellite (XPoSat) on January 1, 2024. This is ISRO's first mission dedicated entirely to studying the universe in X-ray polarization, a field that helps decode the secrets of black holes, neutron stars, and other high-energy cosmic objects.

Why X-ray Polarimetry Matters

When light interacts with matter in extreme environments—like near black holes or pulsars—it gets polarized. Studying this polarization allows scientists to:

- Understand the geometry and behavior of high-energy celestial sources.
- Gain insights into magnetic fields in space.
- Uncover the physical processes behind cosmic explosions and jets.

Payloads on Board

XPoSat carries two important instruments:

POLIX (Polarimeter Instrument in X-rays) – Developed by Raman Research Institute, it measures X-ray polarization in the 8–30 keV energy range.

XSPECT (X-ray Spectroscopy and Timing) – Built by UR Rao Satellite Centre, it provides complementary data on X-ray spectra and timing.

Together, they create a complete picture of how high-energy X-ray sources behave, something no Indian mission has attempted before.

Global Significance

XPoSat places India among the few countries—like the US and Italy—working in this niche area of space science. Its findings will help international collaborations in astrophysics and contribute to our understanding of the most mysterious objects in the universe.

The Road Ahead

The mission is expected to operate for at least five years, producing a treasure trove of data for Indian and global researchers. With XPoSat, India has shown that it's not only exploring planets and the Sun but also pushing the boundaries of deep-space astrophysics.

In short, XPoSat represents India's bold step into the invisible world of high-energy cosmic phenomena.

Atharv karekar
S.Y-B

Chandrayaan-4 – Plans for Sample Return from the Moon

After the success of Chandrayaan-3 in 2023, which achieved India's first soft landing near the lunar south pole, ISRO has set its sights on an even more ambitious goal: Chandrayaan-4, India's first lunar sample return mission.

Why Sample Return Matters

While landers and rovers can analyze rocks on the Moon, bringing samples back to Earth allows for detailed laboratory studies using advanced instruments that cannot be sent into space. Such studies can:

- Reveal the age and composition of lunar rocks.
- Provide clues about the Moon's volcanic and water history.
- Help compare lunar materials with those on Earth and Mars.

Mission Architecture

Chandrayaan-4 is being designed as a multi-module mission, inspired by successful international projects like NASA's Apollo and China's Chang'e missions. The plan includes:

- A lander and rover to collect soil and rock samples.
- An ascent module to lift the samples from the lunar surface.
- An orbiter/return module to bring them safely back to Earth.

This makes it one of ISRO's most technically challenging missions to date.

Strategic Importance

By achieving a lunar sample return, India will join an elite group of nations—USA, USSR, and China—that have accomplished this feat. It will not only boost India's scientific research but also strengthen its position in global space exploration partnerships.

Looking Ahead

Though timelines are still being finalized, Chandrayaan-4 is seen as a stepping stone toward India's broader vision: deep space exploration, lunar resource utilization, and human missions in the long run.

In essence, Chandrayaan-4 is more than just another Moon mission—it is India's leap into the future of planetary science and space technology.

Manorama Satpute

TY-B

NISAR – NASA–ISRO Radar Satellite and Its Applications

The NASA–ISRO Synthetic Aperture Radar (NISAR) mission is one of the most important international collaborations in space science. Scheduled for launch in 2025, NISAR will be the world's first satellite to carry dual-frequency radar (L-band and S-band), built jointly by NASA and ISRO.

Mission Goals

NISAR's primary objective is to monitor changes on Earth's surface with unprecedented accuracy. Using radar waves, it will capture data in all weather conditions, day and night, making it far more reliable than optical satellites.

Key Applications

- Climate and Environment: Track melting glaciers, sea-level rise, and deforestation to better understand climate change.
- Agriculture: Monitor crop growth, soil moisture, and land use for precision farming and food security.
- Disaster Management: Detect early signs of earthquakes, landslides, and floods by mapping ground deformation.
- Infrastructure & Urban Growth: Help governments track city expansion, roads, and construction projects.

Strategic Importance

For India, NISAR will be a critical tool in environmental monitoring, resource management, and national disaster preparedness. Globally, it will strengthen climate research and provide vital data for scientists studying Earth's changing systems.

A Landmark in Collaboration

NISAR represents not just cutting-edge technology, but also the growing partnership between India and the United States in space research. It combines ISRO's space engineering expertise with NASA's advanced radar technology, marking a milestone in international cooperation.

Dhanraj Chavan

BE-A

Space Debris Solutions – Indian Start-ups Working with Japan on Cleanup Tech

As space activity grows rapidly, so does the problem of space debris—defunct satellites, rocket parts, and fragments orbiting Earth at high speeds. These pose a serious risk to operational spacecraft, satellites, and even astronauts aboard the ISS.

The Challenge of Space Junk

According to international space agencies, there are over 36,000 large debris objects currently tracked, with millions of smaller fragments that cannot yet be monitored. Collisions at orbital speeds could cripple satellites vital for communication, navigation, and defense.

India–Japan Collaboration

To address this challenge, Indian space-tech start-ups are joining hands with Japanese firms specializing in orbital debris removal. Start-ups like Digantara and Manastu Space are working on:

- Orbital Debris Mapping – creating accurate, real-time space maps for collision avoidance.
- Active Debris Removal (ADR) – exploring technologies like robotic arms, nets, and drag-enhancement devices to safely de-orbit junk.
- Propulsion Innovations – using eco-friendly fuels to maneuver debris-catching satellites.

Japan, a pioneer in debris management through companies like Astroscale, provides advanced technology and mission experience. Indian firms bring cost efficiency, rapid innovation, and scalable engineering.

Why It Matters

- Safer Orbits: Protect satellites vital for India's telecom, weather, and defense.
- Sustainability: Ensure future missions like Gaganyaan and Chandrayaan aren't endangered by debris.
- Global Leadership: Position India as a responsible space power contributing to long-term orbital safety.

Looking Ahead

With ISRO's support and international collaborations, Indian start-ups are poised to make debris management not just a safety necessity but also a new frontier of space economy. The joint India–Japan efforts could soon lead to real-world missions that clean Earth's orbit, securing the future of space exploration.

Darshan Gadakh

S.Y-A

Indian Space Station Plans – PM Modi's 2035 Vision

India has made giant strides in space exploration, from Chandrayaan-3's lunar success to the upcoming Gaganyaan mission. The next ambitious step is the Indian Space Station, a permanent orbital platform envisioned to be operational by 2035, announced by Prime Minister Narendra Modi.

The Vision

The space station is expected to be a modular platform capable of hosting astronauts for extended durations. It will focus on:

- **Microgravity research for materials, medicine, and life sciences.**
- **Technology testing for long-term human spaceflight.**
- **International collaboration, opening doors for global researchers.**

ISRO's Roadmap

ISRO is aligning its human spaceflight program with this vision:

- **Gaganyaan (2025–2026): Demonstrating human spaceflight capability.**
- **Docking & Rendezvous Missions: Practicing techniques for station assembly.**
- **Module Development: Building habitation and research modules with life-support systems.**

Why It Matters

- **Scientific Gains: Advance research in pharmaceuticals, advanced alloys, and space farming.**
- **Strategic Leadership: Join the select group of nations (USA, Russia, China) with human presence in orbit.**
- **Economic Impact: Boost India's space-tech ecosystem, attracting start-ups and global partners.**

The Future Outlook

By 2035, the Indian Space Station could become a hub for innovation, research, and global collaboration, symbolizing India's rise as a leading space power. It won't just be a national project—it could evolve into a shared platform for humanity's future in space.

Krushna Ugale

BE-B

Overview of ISM – India Semiconductor Mission

In December 2021, the Government of India launched the India Semiconductor Mission (ISM) with an outlay of ₹76,000 crore. This landmark initiative aims to make India a global hub for semiconductor and display manufacturing, reducing dependence on imports and strengthening national security.

Why Semiconductors Matter

Semiconductors are the "brains" of modern electronics. From smartphones and 5G equipment to cars, satellites, and AI systems, everything depends on microchips. With global supply chain disruptions and rising demand, India's reliance on imports posed both economic and strategic risks.

Mission Objectives

- Establish fabs and ATMP units (Assembly, Testing, Marking, Packaging).
- Build ecosystem support for startups, design houses, and R&D.
- Encourage collaborations with global players for technology transfer.
- Promote talent development in VLSI and chip design.

Key Highlights

- The scheme is technology-agnostic, covering logic chips, memory chips, and compound semiconductors.
- ISM also supports display fabs for LCD, AMOLED, and advanced screens.
- Special focus on trusted electronics for defence, space, and critical infrastructure.

The Bigger Picture

The India Semiconductor Mission is not just an industrial policy but a national strategy. It aligns with the vision of Atmanirbhar Bharat, ensuring India is not left behind in the chip-driven global economy. Over the next decade, ISM is expected to transform India into a key player in the global semiconductor supply chain.

Deep Kamble

S.Y-A

Fund Allocation – 97% of ₹65,000 Crore Already Committed

The India Semiconductor Mission (ISM) has moved beyond policy announcements into rapid execution. Out of the ₹65,000 crore approved funds under the program, nearly 97% has already been committed to ongoing semiconductor and display projects. This showcases the government's strong intent to build a self-reliant chip ecosystem.

Where the Funds Are Going

- Fab Projects: Major investments like Tata-PSMC's fab in Gujarat and Micron's ATMP unit have secured a large share of allocations.
- Design Ecosystem: Grants are supporting chip design startups, VLSI labs, and Centers of Excellence across India.
- Packaging & Testing Units: Funding is flowing into ATMP/OSAT facilities, ensuring end-to-end capability.

Why This Matters

Global semiconductor fabs require billions of dollars in capital. India's quick disbursal of funds ensures that projects don't stall due to financial bottlenecks. With 97% allocation completed, ISM has reached a critical execution phase, sending a strong signal to global investors.

The Road Ahead

The committed funds mark just the first wave of India's semiconductor push. Future allocations will likely focus on:

- Expanding supply chain infrastructure (chemicals, gases, wafers).
- Skill-building programs to support fab operations.
- Long-term R&D for next-gen chips in AI, quantum, and 6G.

Conclusion

By committing almost the entire sanctioned budget within a short time, India has shown decisive action, not just vision. This positions the nation firmly on the path toward becoming a global semiconductor hub.

Nupur Kale

S.Y-A

Key Investments – Tata-PSMC, Micron ATMP, Foxconn, Kaynes, etc.

The India Semiconductor Mission (ISM) has begun attracting multi-billion-dollar investments from global and Indian giants, marking a turning point for the nation's electronics future.

Tata–PSMC Fab

Tata Electronics, in partnership with Taiwan's Powerchip Semiconductor Manufacturing Corp (PSMC), is building India's first cutting-edge semiconductor fab in Gujarat. This facility will focus on 28 nm and above chips, vital for automotive, telecom, and industrial electronics.

Micron's ATMP Facility

In Sanand, Gujarat, Micron Technology (USA) is setting up an Assembly, Testing, Marking & Packaging (ATMP) unit with an investment of $2.75 billion. It will package and test memory chips, creating 15,000+ jobs.

Foxconn's Role

Foxconn, the world's largest electronics manufacturer, is investing in semiconductor and EV ecosystems in India. While its fab plans are under review, Foxconn continues to push collaborations in ATMP and component manufacturing.

Kaynes & Others

Indian company Kaynes Semicon is investing in a semiconductor ATMP plant in Karnataka, while firms like Tessolve, Sahasra, and SPEL are strengthening the chip design and packaging ecosystem.

Sumedh Kamble

S.Y-A

Skill Development – VLSI Design Courses and AICTE's Role

The semiconductor industry is not only about fabs and machines—it equally depends on a skilled workforce. For India's ₹76,000 crore Semiconductor Mission to succeed, VLSI (Very Large-Scale Integration) design skills are crucial.

VLSI Design Courses

Colleges and universities across India are now offering specialized VLSI programs covering:

- Chip architecture & RTL design
- ASIC & FPGA development
- EDA tool training (Cadence, Synopsys, Mentor Graphics)

These courses ensure students gain hands-on exposure in chip design before entering industry.

AICTE's Role

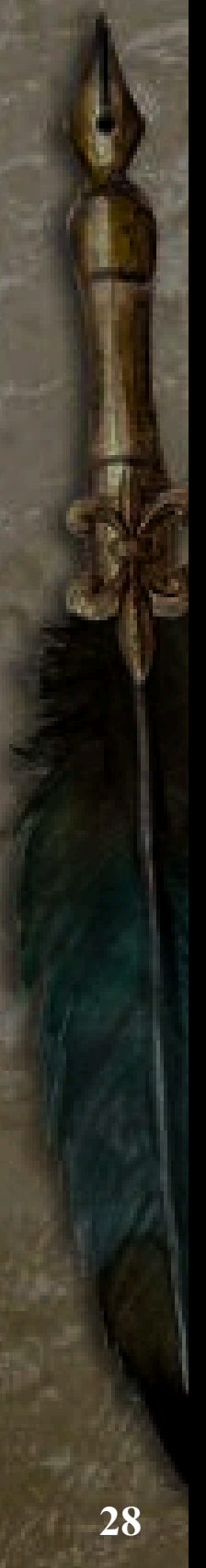
The All India Council for Technical Education (AICTE) has stepped in to bridge the gap by:

- Launching curriculum frameworks for semiconductor & VLSI courses.
- Supporting chip design training labs across engineering colleges.
- Partnering with global firms like ARM, Intel, and Synopsys for affordable EDA tools.

Gargi Kasture

S.Y-A

POETRY



||हसिन लम्हे||

कभी दोस्तों सगं हंसी की महफ़ि ल जमती थी,
कभी नोट्स की कमी मेंरातेंभी कम लगती थी।
लेक्चर सेज़्यादा तो कैंटीन भाती थी,
यादेंवही हैं... जो दोस्तों सगं बन जाती थीं।
रुकतेनहींयेलम्हे, चलती ही जाती हैज़ि दं गी,
कॉलेज सेवि दा लेतेवक्त... रह जाएगी बस यादों की बदं गी।
कल तक हंसी-ठि ठोली थी, आज जदुाई का आलम है,
कॉलेज छोड़नेका ग़म... सबसेबड़ा दर्द और सलाम है।
दोस्तों सगं बि ताए लम्हेअब कहानी बन जाएंगे,
आज जो हँसी है, कल वही यादों मेंआसँ ूबन जाएंगे।
कि ताबेंछोड़ देंगे, इम्ति हान भलू जाएंगे,
पर येकॉलेज की गलि याँ... कभी दि ल सेन नि कल पाएंगे।
जानेकि तनेसफ़र तय करेंगेज़ि दं गी में,
पर कॉलेज की येचार साल... सबसेहसीन रहेंगेयादों में।

Shrawani pachang
TY - B
Entc

आई - मलुगा आणि पाऊस

मलुगा म्हणे देवाला, "पाऊस येऊ दे
मला भि जायचयं , मला मोकळा श्वास घेऊ दे
माझ्या अंगावर पावसाचे थेंब टिपू दे
प्रत्येक थेंबावर चित्र माझेच दिसू दे"

आईला काळजी मुलाची, ती हाक मारे देवाला
"आज पाऊस नको देवा, थंडी वाजते मुलाला"
आईची अशी ममता, सावली जशी जगाला
देवालाही ऐकावंलागल, ठेवलं स्वतःपढ्ढे त्याने आईला

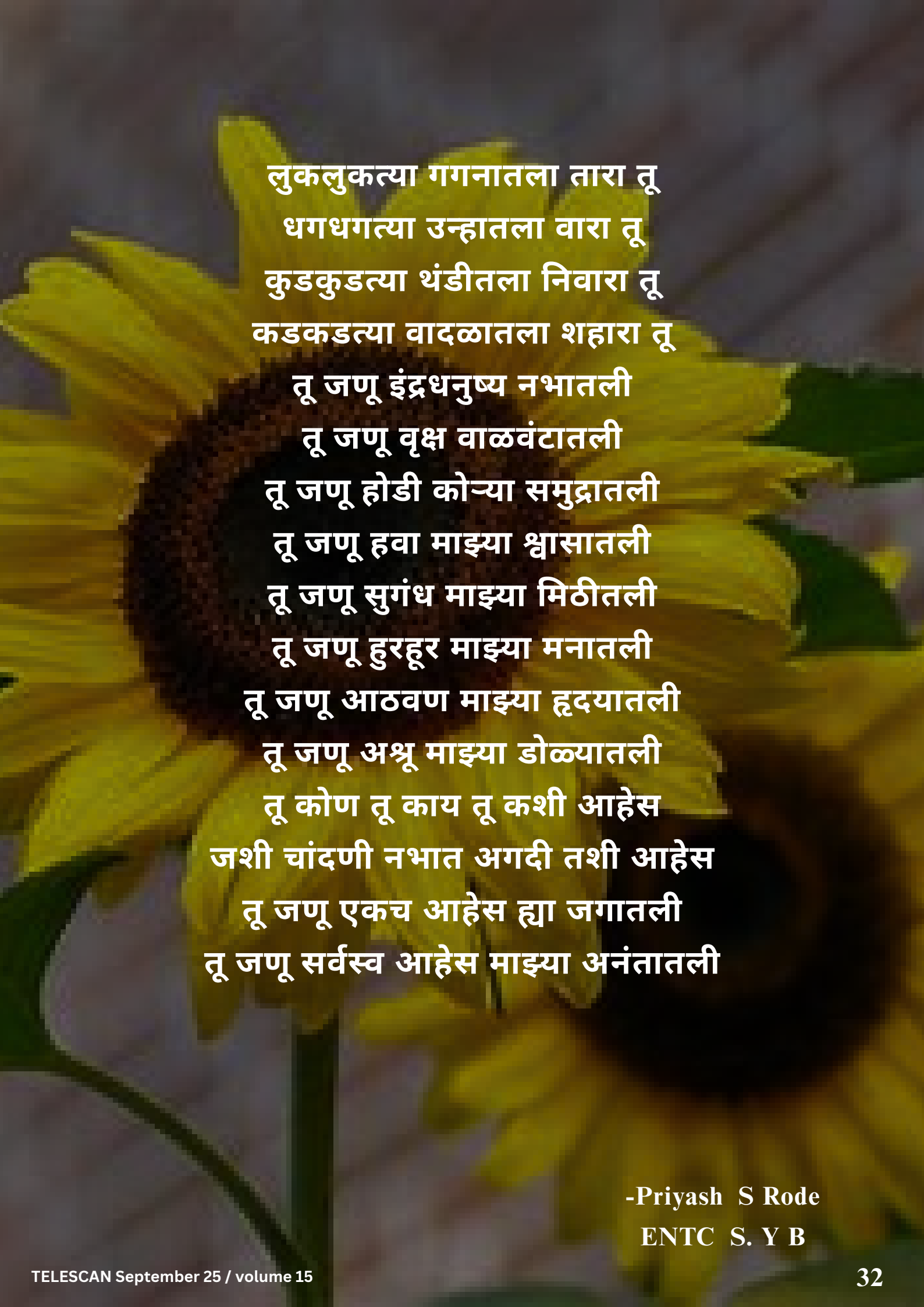
हाक मारतो मलुगा, "देवा, पाऊस का येत नाही"
उत्तर देते आई, "बाळा, आज ती वेळ नाही"
आईसारखी माया या जगात कुठे नाही
आईच असते देव, वेगळा शोधावा लागत नाही

Tejas Kamble
EnTC
S. Y A

जवानो की काहानी

कह देना उन हवाओं से
जो बहे जंगल गांवों से
मैं मातृभूमि की रक्षा करता
खड़ा हूं आचल पहाड़ों पे
मैं पुत्र हूं उस माता का
जो शूर सा है एक दिल लिए
मेरी यादों का पिटारा खोलके भी
जिसके आंखों से ना आंसू की बूंद बहे
मैं पुत्र हूं उसे पिता का
जो सीना तान चलते हैं
की बेटा उनका सैनिक है
जो राष्ट्ररक्षा की बुनियाद सिलते है
मेरे लिखे खत है जो
नाम है जिस महबूबा के
बताना उसे लौटूंगा जरूर
संग लिए कुछ झोंके हवा के
ए हवा
मिले समय तो मैदान जाना
भारी होगी महफिल मेरे यारों की
राह देखते होंगे रोज वह
मुझे लिखे खत के जवाबों की
कह देना उन सब से की कह देना उन सब से
लौटूंगा जरूर तिरंगा लेके फहरा के हो या लिपट के
कुछ आंसुओं के बीच रहे अगर सिमट के
तो सिर्फ मुझे मुस्कुरा कर देखना
रहो अगर समक्ष खड़ा तो बाहर जरूर सेखना
तकदीर अपनी हर कदम आजमाता चलता हूं
हूं एक सैनिक मै देश के हर गांव में मिलता हूं

-Ansh Salunkhe
ENTC S. Y B_



लुकलुकत्या गगनातला तारा तू
धगधगत्या उन्हातला वारा तू
कुडकुडत्या थंडीतला निवारा तू
कडकडत्या वादळातला शहारा तू
तू जणू इंद्रधनुष्य नभातली
तू जणू वृक्ष वाळवंटातली
तू जणू होडी कोऱ्या समुद्रातली
तू जणू हवा माझ्या श्वासातली
तू जणू सुगंध माझ्या मिठीतली
तू जणू हुरहूर माझ्या मनातली
तू जणू आठवण माझ्या हृदयातली
तू जणू अश्रू माझ्या डोळ्यातली
तू कोण तू काय तू कशी आहेस
जशी चांदणी नभात अगदी तशी आहेस
तू जणू एकच आहेस ह्या जगातली
तू जणू सर्वस्व आहेस माझ्या अनंतातली

-Priyash S Rode
ENTC S. Y B

India 2025 Quiz

1. Who is the CEO of Tesla and SpaceX (2025)?
A) Jeff Bezos
B) Tim Cook
C) Elon Musk
D) Sundar Pichai

2. Which company developed the Windows operating system?
A) Microsoft
B) Apple
C) Google
D) IBM

3. What does AI stand for in technology?
A) Advanced Interface
B) Artificial Intelligence
C) Automated Internet
D) Applied Innovation

4. Which company owns YouTube?
A) Apple
B) Google
C) Microsoft
D) Amazon

5. In which year was the first iPhone launched?
A) 2005
B) 2006
C) 2007
D) 2008

6. Which of these is NOT a programming language?
A) Python
B) Java
C) HTML
D) Microsoft

7. What is the full form of URL?
A) Uniform Resource Locator
B) Universal Reference Link
C) Unified Routing Language
D) User Reference Locator

8. Which company is also known as “Big Blue”?
A) Dell
B) IBM
C) Intel
D) HP

9. Which was the first search engine on the Internet?
A) Google
B) Bing
C) Yahoo
D) Archie

10. Which company is the parent of Instagram and WhatsApp?
A) Meta
B) Microsoft
C) Google
D) Apple

11. What does CPU stand for?
A) Central Process Unit
B) Central Processing Unit
C) Computer Processing Utility
D) Core Power Unit

12. Which company introduced the Android operating system?
A) Apple
B) Microsoft
C) Google
D) Nokia

13. What is the nickname for the computer bug discovered by Grace Hopper in 1947?
A) Moth
B) Beetle
C) Spider
D) Worm

14. Which company developed the ChatGPT model?
A) OpenAI
B) Microsoft
C) Google
D) Meta

15. What is the full form of IoT in technology?
A) Internet of Technology
B) Integration of Tools
C) Internet of Things
D) Interface of Tech of IoT in technology?

16. Which company makes the Galaxy line of smartphones?
A) Apple
B) Samsung
C) OnePlus
D) Xiaomi

17. What is the world's most popular social media platform by users (2025)?
A) Facebook
B) TikTok
C) Instagram
D) WhatsApp

18. Which Indian company is a major competitor in the IT services industry globally?
A) Infosys
B) Airtel
C) Paytm
D) Flipkart

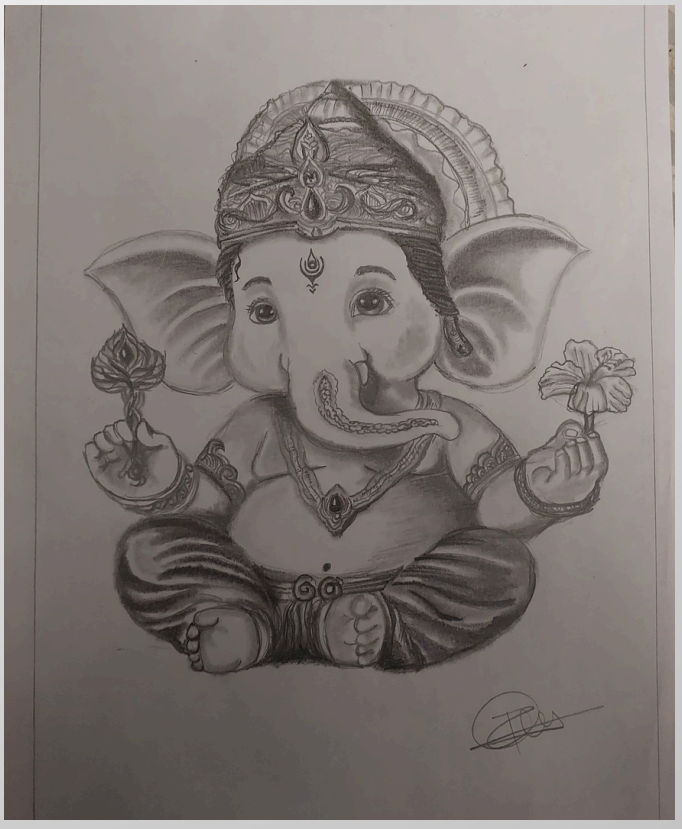
19. What does VPN stand for?
A) Virtual Private Network
B) Variable Protocol Node
C) Verified Privacy Number
D) Virtual Processing Network

20. Which company created the M-series processors for laptops and desktops?
A) Intel
B) AMD
C) Apple
D) Qualcomm

Answer Key

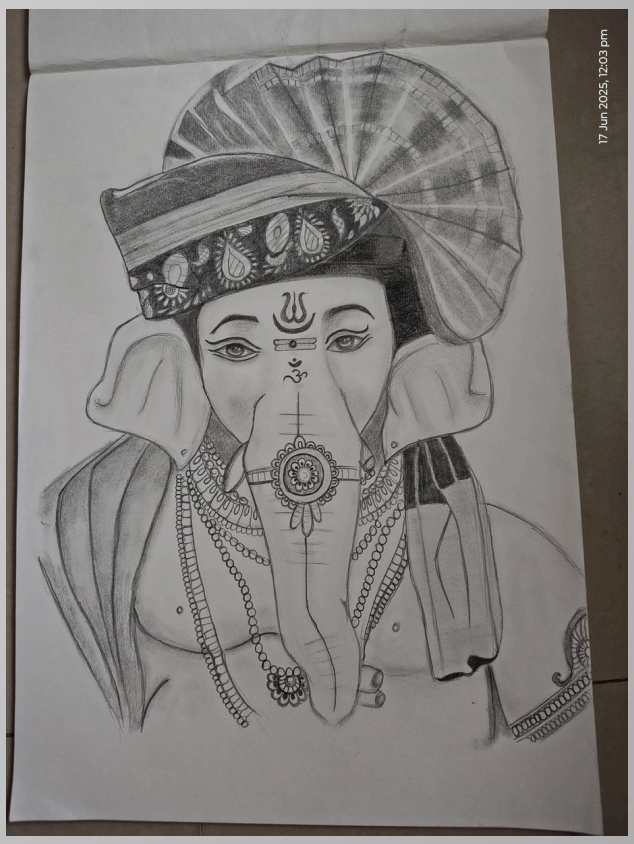
1. C
2. A
3. B
4. B
5. C
6. D
7. A
8. B
9. D
10. A
11. B
12. C
13. A
14. A
15. C
16. B
17. A
18. A
19. A
20. C

Canvas Chronicles



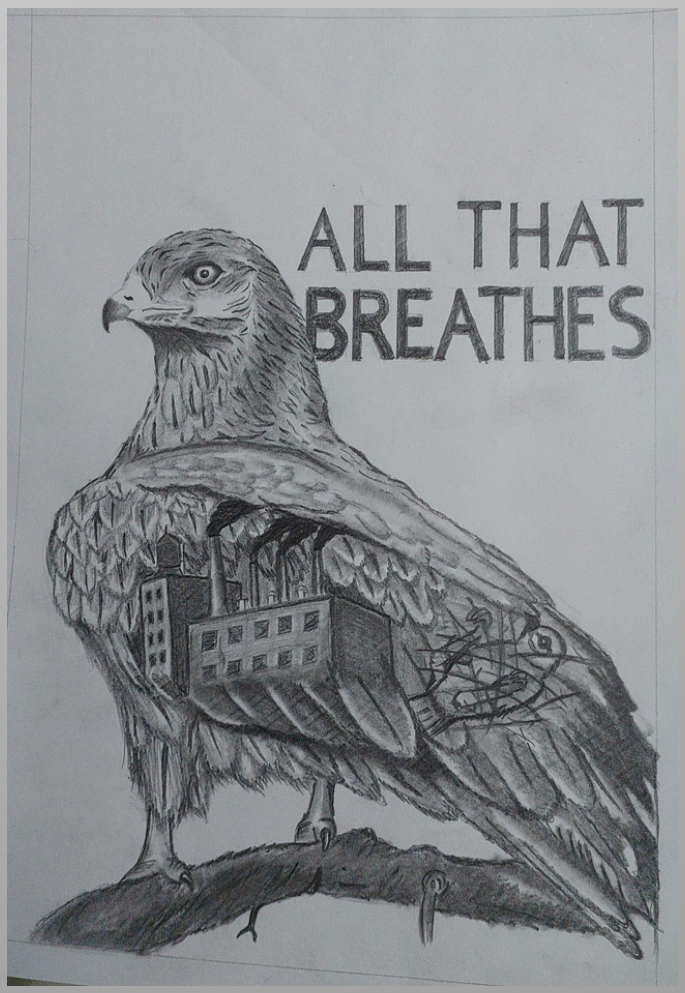
Prajwal Pawar

TY -B



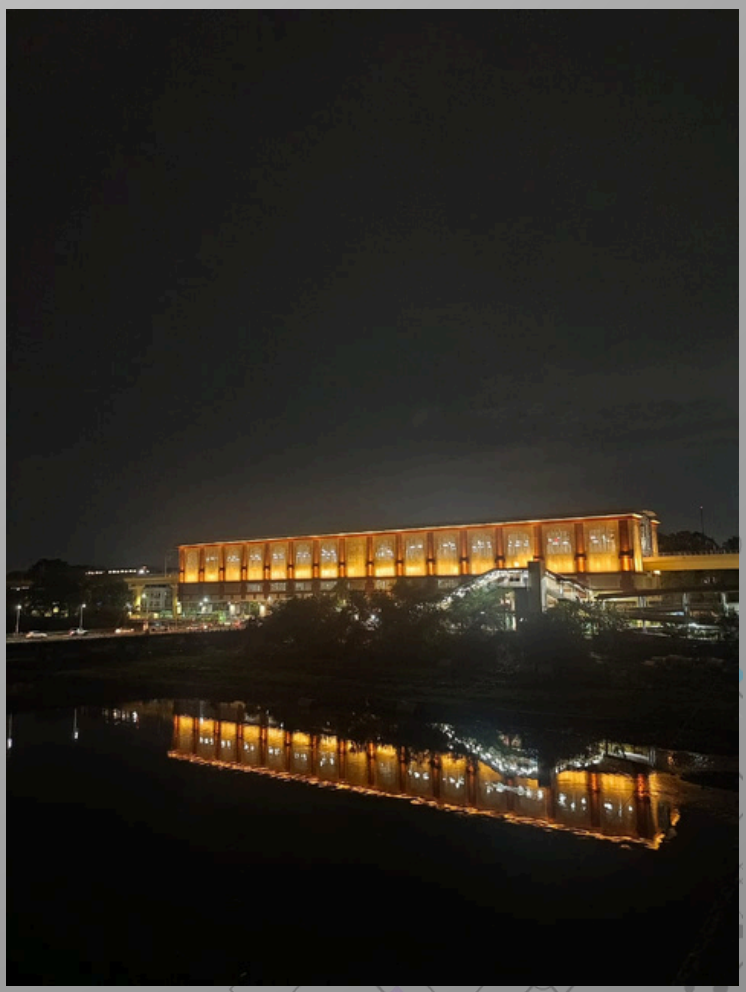
Isha Unta

T.Y B



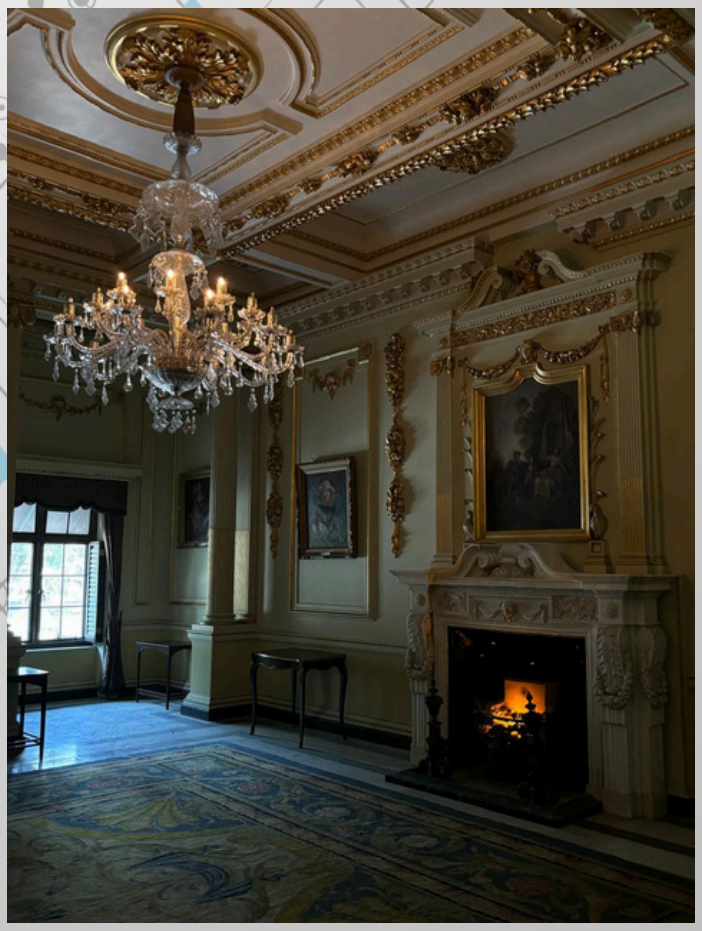
Prajwal Pawar

TY -B



Tejas kamble

S.Y-A



Khushi Chetan Sancheti

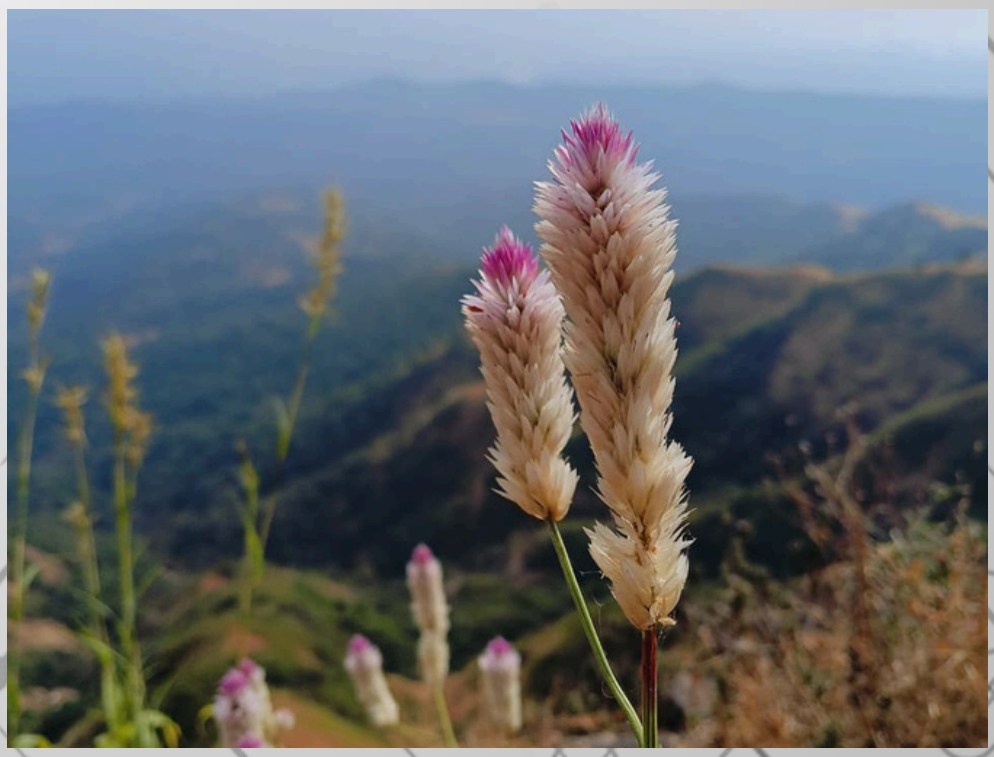
SY-B (ENTC)

Ruchira Nagre

TY B.Tech (EnTC-A)

Shravani Chidrawar

ENTC-A



Ishwari More
SY-B

Ansh Salunkhe
SY-B

Rasika Akhare
SY-A

Gaurav Shinde
SY-B

Priyash Rode
SY-B

Neeraj Jadhav
SY-A

Ashlesha Shinde

SY-B

Rachana Mahangare

TY B

Rachana Mahangare

TY B

Swaraj Chavan

TY-A

THANK YOU