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## UNION MINISTER INAUGURATES INDIA'S FIRST 3D-PRINTED POST OFFICE IN BENGALURU

**B**engaluru, India - In a remarkable leap in construction technology, Union Minister for Railways, Communications, Electronics, and IT, Ashwini Vaishnaw, officially dedicated India's first 3D-printed post office to the nation on 06 October, 2023. This groundbreaking achievement, situated in Bengaluru's Cambridge Layout, marks a significant milestone in the country's infrastructure development.

strong bonding between the layers, making it ideal for 3D printing. George Abraham, Head of Operations (South and East) at L&T, explained, "It is because of the robotic intervention that involves pre-embedded designs that we were

conventional construction methods and assessing the project's techno-commercial proposal.



The unique feature of this 3D-printed post office is the absence of vertical joints, continuous printing of the full perimeter, and flexibility to incorporate curved surfaces. The technology also allows for continuous reinforced concrete footing and three-layer walls with the outer layers printed with concrete and the middle layer being reinforced concrete, resulting in an impressive 43-day construction period.

The inauguration ceremony, which was conducted virtually by Union Minister Vaishnaw from the General Post Office building, showcased India's prowess in cutting-edge construction techniques. The 3D-printed post office was completed in just 43 days, two days ahead of its planned deadline, showcasing the efficiency of this innovative method. The construction was executed by Larsen & Toubro Limited, with technological support from IIT Madras under the guidance of Professor Manu Santhanam from the Building Technology and Construction Management Division of the Department of Civil Engineering.

able to complete the entire construction activity in a period of 43 days, compared to about 6-8 months taken by conventional methods." This not only accelerated construction but also reduced costs by approximately 30-40% compared to traditional construction methods, with the project costing only Rs 23 lakh.

Developers emphasize that 3D printing enables individual customization of structures, making it a game-changer in housing-related construction. It also allows for the incorporation of weatherproofing and utilities within the walls for more efficient construction, providing quality housing solutions even in challenging terrains.

Minister Vaishnaw, while expressing his admiration for Bengaluru's role in shaping India's progress, stated, "Bengaluru always presents a new picture of India. The new picture that you saw today in terms of this 3D-printed post office building, that's the spirit of India today. That's the spirit with which our country is progressing today." This groundbreaking post office boasts a built-up area of 1,021 square feet and was constructed using 3D concrete printing technology. This fully automated building construction technology employs a robotic printer that deposits concrete layer by layer according to the approved design. Special-grade concrete, which hardens quickly, ensures

Professor Santhanam from IIT Madras emphasized the need to scale up the use of indigenous machines and robots involved in 3D printing. He also highlighted the critical requirements for the concrete material used, which provides pumpability, extrudability, buildability, and desirable mechanical properties. IIT Madras and L&T collaborated closely in the lead-up to the post office's construction, with Professor Ravindra Gettu acting as a primary advisor. He played a crucial role in comparing 3D-printed technology with

Rajendra Kumar, Chief Postmaster General of Karnataka Circle, shared plans to utilize 3D printing technology for constructing post offices across 400 vacant sites where postal services are not currently accessible. This marks a significant step toward low-cost construction options using 3D printing technology and has the potential to revolutionize housing construction in the future.

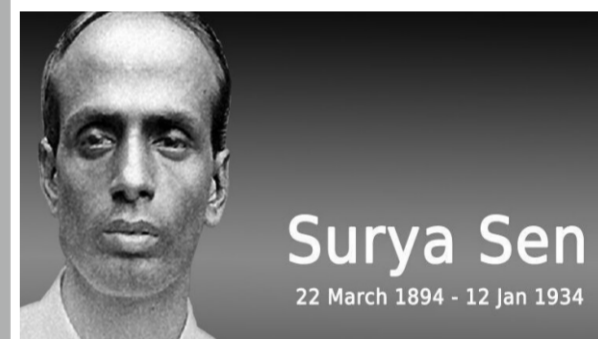
India's first 3D-printed post office represents a milestone in the nation's journey toward innovation in construction technology, offering promising solutions for a wide range of applications beyond postal services.

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## THE SAGE OF WISDOM AND ENLIGHTENMENT: THE LIFE AND TEACHINGS OF VASHISTHA

Once upon a time, in the ancient land of India, there lived a great sage named Vashistha. He was not an ordinary sage but a revered and wise seer who possessed immense knowledge and spiritual power. His life was filled with remarkable incidents that left a profound impact on the world and generations to come.

Sage Vashistha is also one of the most ancient and venerated Vedic rishis or sages, and one of the Saptarishis (seven great Rishis). He is recognized as the primary author of Mandala 7 of the Rigveda. His thoughts have left a profound impact, and he was named the inaugural sage of the Vedanta school of Hindu philosophy by Adi Shankara.

The story of Vashistha's birth is narrated in the Devi Bhagavad Purana, as well as other texts. According to these accounts, Vashistha is believed to have been born thrice. In his first birth, he was the mind-born son, or Manasputra, of Brahma. However, after the Daksh Yajna, Vashistha's first life came to an end. Brahma then recreated him, granting him a second birth. In his second life, Vashistha served as the guru of King Nimi. Unfortunately, during a yajna, King Nimi inadvertently neglected to invite his teacher, Vashistha. This oversight enraged Vashistha, prompting him to curse Nimi with an untimely death. Nimi cursed Vashistha for the same.

Vashistha, terrified by this curse went to his father, Lord Brahma, and begged for a way to get out of this. Lord Brahma gave him a suggestion to merge Varuna (god of oceans) & Mitra (protector of treaties). Vashistha reappeared when Urvashi was seen by Varuna & Mitra. Due to this very incident, it is mentioned that Varuna, Mitra, and Urvashi as his parents. His appearance is described in such a manner: Long flowing hair neatly tied into a bun, a beard, tilak on his forehead, and a handlebar mustache.

Sage Vashistha and his family are mentioned at numerous locations in the Rigveda Purana. The name of this sage embodies the qualities of being superior, prosperous, and exceptional in his endeavors. His thoughts, deeds, and life align perfectly with the essence of his name. He was a learned scholar who traversed the Indus River to establish a school and disseminate knowledge, education, and enlightenment. He was renowned as Arundhati Natha, signifying his role as the spouse of Arundhati. Arundhati always had a bend towards learning and less towards household chores. Arundhati had not only learned the Vedas but also comprehended them.

Vashistha and Arundhati lived on the banks of the

Ganga which in today's day is the state of Uttarakhand. In the due course of Mahabharata's story, it is believed that this is the same place where Rishi Vyasa and the Pandavas fixed their abode. Talking about the ancient epics famous in the world, Vashistha has a significant contribution to the Ramayana. He was the teacher and guide to Rama, Lakshman, Bharat & Shatrughna. He was also the family priest of the Raghu Dynasty. Vashistha had clarity, belief, and influence in his ideas.

Vashistha was very famous for his fight with Vishvamitra who is another one of the Saptarishi as well. Vashistha has been mentioned in various texts. Yoga Vashistha, Vashistha Samhita, and some versions of Agni



Purana and Vishnu Purana are dedicated to him and his great work. He was a teacher to the Ikshvaku king's family, a priest, and a guru. His disciples are Manu, Rantideva, Nahusha, Shri Rama, and Bhishma. Later on Samvarta, King of Bharata became his student as well. He won his kingdom back with the help of Vashistha and his guidance.

On one occasion, Sage Vashistha was approached by an imperious king, Kaushika, who was convinced that he was the most potent individual in the world. He requested the sage to make him the most powerful person in existence. However, Vashistha declined, informing him that true strength originates from within and cannot be bestowed by another. Unhappy with this response, the king decided to take control of his destiny. He approached another sage, Vishwamitra, with the same request. Vishwamitra accepted and began to teach the king various mantras and rituals. Yet, despite his efforts, the king failed to master them.

In the course of practicing an exceptionally challenging mantra, the king's frustration peaked, leading him to abandon his quest. He returned to Sage Vashistha, seeking forgiveness. The sage pardoned him, reiterating that true power is rooted in humility and self-control. Recognizing his error, the king became a faithful follower of Sage Vashistha.

In addition to these tales, Sage Vashistha is famous for his legendary disputes with Sage Vishvamitra. Vishvamitra coveted Vashistha's divine bovine, Nandini, that could satisfy material desires. Vashistha countered all of Vishvamitra's weaponry.

In another account, Vashistha's sons were slain by Vishvamitra. Stricken with grief, Vashistha contemplated suicide. However, he was prevented from carrying out his plan and started wandering around the world. Eventually, he returned to his hermitage. As he neared his dwelling, he heard a youthful voice reciting the Vedas. Upon entering his hut, he found only his daughter-in-law, Adrisyanti, who had given birth to a son reciting the Vedas.

Vashistha understood that life extends beyond material acquisitions, encompassing spiritual richness. He embraced his grandson and imparted to him his vast knowledge of the Vedas. His grandson matured into a wise and erudite man who later became a respected sage himself.

Vashistha's story implies that life transcends material possessions and includes spiritual affluence. It emphasizes the importance of introspection and nurturing our spiritual aspects to lead a meaningful life.

Another noteworthy incident in Vashistha's life was his role as the guru (teacher) of Lord Rama, the seventh incarnation of Lord Vishnu. Vashistha imparted divine knowledge and guided Lord Rama on the path of righteousness. The teachings of Vashistha emphasized the importance of integrity, duty, and selfless service.

Vashistha's teachings and his own exemplary life became a beacon of light for countless individuals seeking guidance and wisdom. His unwavering faith in the ultimate reality and his dedication to the welfare of all beings continue to inspire generations.

The story of Sage Vashistha teaches us that knowledge, when combined with humility, compassion, and righteousness, has the power to transform lives. It reminds us that we can overcome any adversity and rise above our limitations. Just like Vashistha, we can choose to be a source of inspiration and positive change in the world.

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## SURYA SEN: A LIGHT IN THE DARKNESS OF COLONIAL RULE

In the heart of Chittagong, a town marked by the oppressive presence of the British Empire, there lived a man who would become a legend. Surya Sen, born on March 22, 1894, into the Baidya family of Noapara, was not just an ordinary schoolteacher but a fervent revolutionary who etched his name into the annals of Indian history. Affectionately known as Masterda, he became a beacon of hope in an era shrouded in darkness.

The fire of freedom ignited in young Surya Sen's heart when he first learned about the Indian independence movement in 1916. It was at this moment that he pledged his life to the cause of liberating India from the shackles of British colonial rule. Under the guidance of Sarat Chandra Basu, he joined the Anushilan Samiti, a revolutionary organization in Bengal that believed in the power of violence as a means to end British tyranny.

Upon completing his studies in 1918, Surya Sen embraced a new role as a mathematics teacher in Chittagong. There, he not only educated young minds but also nurtured a generation of aspiring revolutionaries, teaching them weaponry and bomb-making. It was during this phase that the audacious plan to raid the Chittagong armory took shape.

The plan was as audacious as it was dangerous. Surya Sen's vision went beyond merely seizing arms and ammunition. He aimed to cut off Chittagong from the rest of the British Raj by destroying communication infrastructure. On the fateful night of April 18, 1930, Masterda and his dedicated associates, including Ganesh Ghosh, Lokenath Bal, Ananta Singh, and others, embarked on a mission that would go down in history.

Their courageous efforts led to the successful capture of the police armory and auxiliary force armory, but ammunition remained elusive. With unwavering determination, they severed the telegraph, telephone, and railway lines, isolating Chittagong from the British



authorities. Surya Sen, with immense pride, hoisted the Indian flag at the police armory and declared the establishment of a Provisional Revolutionary Government.

Their triumph was short-lived, for the British were swift to respond. In their desperate escape, the revolutionaries fled to the Jalalabad Hills, where they faced a

brutal and fierce confrontation with British Indian Army units. The battle cost the lives of twelve valiant revolutionaries, while nearly eighty British troops also met their end.

With Masterda's unwavering spirit guiding them, the surviving revolutionaries dispersed into smaller groups, finding

shelter in nearby villages and embarking on daring raids against government property. Astonishingly, the villagers did not betray their heroes but instead offered unwavering support, shelter, and sustenance. This bond testified to the profound connection between the urban revolutionaries and the rural populace, bound by the common cause of freedom.

However, destiny had a different plan in store for Surya Sen. A traitor among their midst, a man named Netra Sen, revealed Surya Sen's hiding place, leading to his arrest in February 1933. In a twist of fate, this betrayer was later avenged by fellow revolutionaries.

Yet even behind bars, Surya Sen's ordeal was far from over. He faced brutal torture at the hands of British authorities. His bones, limbs, and joints were shattered, his nails torn out, and his body subjected to unbearable pain. But through it all, his spirit remained unbroken.

On January 12, 1934, Surya Sen faced the gallows, his execution a painful yet inevitable end to his heroic journey. Tarakeswar Dastidar, who had valiantly attempted to rescue Masterda from prison, also met a similar fate.

Though the British might have taken Surya Sen's life, they could not extinguish the fire of freedom he had ignited. His legacy endures as a testament to his indomitable spirit, unwavering courage, unparalleled sacrifice, and profound commitment to the ideals of humanism and the relentless pursuit of freedom.

Masterda, Surya Sen, may be gone, but his memory lives on, an eternal source of inspiration for those who believe in the power of the human spirit to overcome oppression and tyranny, and to tirelessly strive for a brighter, free future.

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## INDIA'S NEW POLICY TO PROMOTE BAMBOO CULTIVATION AS 'GREEN GOLD'



A new policy is set to boost bamboo production in India, which currently holds the second position globally after China. Bamboo has numerous uses, such as bioenergy production, paper manufacturing, furniture making, and construction. One of its standout features is its rapid growth, and it's known for its ability to absorb carbon dioxide and produce oxygen more effectively than other plants. These qualities have prompted many countries, including India, to encourage bamboo cultivation.

NITI Aayog India is in the process of developing a comprehensive policy to promote the benefits of bamboo plants and encourage their cultivation. This policy will educate farmers about the advantages of bamboo, from cultivation and harvesting to various uses. The Indian government aims to position bamboo as "Green Gold." Multiple meetings have been convened under the guidance of NITI Aayog member Ramesh Chand to lay out a blueprint that will significantly boost bamboo cultivation and utilization, with the strategy covering plantation, production, processing, standardization, and utilization, ultimately fostering a circular economy in the sector.

This policy is expected to be implemented by the end of the year, along with food and safety standard certification for bamboo production and geographical indication tagging for exports.

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## RANGDE'S XAMAHAR INITIATIVE EMPOWERS ASSAM'S POTATO FARMERS WITH ACCESS TO CREDIT AND FINANCIAL SOLUTIONS



The peer-to-peer social investing platform, RangDe, has announced its successful disbursement of over 85 lakh worth of credit to landless farmers in Assam through the Xamahar initiative, which aims to provide over 10,000 potato farmers access to credit over the next two years, with up to 50 percent of them as

borrowers. Despite favorable weather conditions and environment for potato cultivation, Assam has struggled with low average potato production compared to the national average due to challenges like seed shortages, high costs, pesticide unavailability, and irrigation issues. In response to these bottlenecks, Rang De has partnered with Siddhi Vinayak Agri Processing Pvt Limited (SV Agri) to support the potato value chain in Assam. This collaboration offers innovative financial solutions, connecting potato

farmers with suppliers and buyers while providing tailored credit options, creating a sustainable ecosystem for growth.

Currently implemented in eleven districts, this initiative is set to expand to others as well, with over 18 farmer producer companies collaborating with the scheme. Smita Ram, Co-founder and CEO of Rang De, expressed delight at the positive response from the farmers and farmer producer companies in Assam, as the initiative offers tailored, affordable credit with low-interest rates and a buy-back option for various potato varieties, enabling farmers to invest in high-quality seeds and modern farming practices.

This initiative is part of AgriFinXamahar ("Xamahar"), a competitive funding mechanism supporting innovative financial services at scale for farmers in key agricultural value chains in Assam.

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## TRANSFORMING MANIPUR INTO A TEA TOURISM DESTINATION AND REPLACING NARCOTICS

Manipur is reportedly emerging as a hub for poppy seed cultivation and the drug trade, posing significant challenges for the state, despite government efforts to address the issue. Many individuals are drawn into these illicit activities due to limited employment opportunities, making it a means of livelihood. However, Mickey Tea India, a recent entrant in the Indian tea industry, is taking an innovative step to replace narcotics with tea.

Mickey Tea India has ventured into Manipur with the goal of transforming it into a tea tourism destination in India. They have identified land blessed with lush green tea gardens and serene landscapes, ideal for establishing tea tourism in Manipur. This Manipuri startup aspires to lead the Indian tea industry and

replace narcotics with tea cultivation.

Tea scientist P. Bordoloi, a former advisor to the Toklai Tea Research Association, the country's leading tea research institute, believes that Manipur's climate conditions, temperature, rainfall, and soil are conducive to producing some of the world's highest-quality tea. Another promising sign is the natural growth of wild tea in Manipur's forests.

Milan Koijam, the director of this initiative, aims to produce 16,826 kg of tea by converting 7,500 hectares of land previously used for poppy cultivation. He



anticipates generating around 72 crore in revenue and emphasizes the positive impacts of this endeavor, including bolstering India's tea industry, providing legal employment opportunities for the people of Manipur, and contributing to the state's GDP.

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## GREEN HORIZONS: A COLLABORATIVE JOURNEY IN CLIMATE EDUCATION BY MINISTRY OF EDUCATION AND UNICEF

In a formidable partnership, the Ministry of Education (MoE) and UNICEF have embarked on a groundbreaking venture named the 'Greening Capacities Initiative.' This collaboration is a pivotal stride towards advancing climate education and empowering youth to spearhead solutions for climate change, thus forging a sustainable future. Anchored in the ambitious Green Education Partnership Roadmap, this initiative sets the stage for transformative action in preparation for COP28.

The 'Greening Capacities Initiative' stands as a beacon, illuminating the path to equip young minds with knowledge and tools essential for tackling the multifaceted challenges of climate change. At its core are four pillars outlined in the roadmap: 'Greening Capacities,' 'Greening Learning,' 'Greening Schools,' and 'Greening Communities.'

As a testament to their commitment, the collaboration has meticulously designed three crucial collaborative programs: Educators Training, Net Zero Heroes, and the Children's Art Competition. These programs are thoughtfully tailored to empower students and educators, enabling them to comprehend the complexities of climate change and actively contribute to an environmentally sustainable future.

Amna Al Dahak Al Shamsi, Assistant Undersecretary of the Care and Capacity Building Sector at the Ministry of Education, emphasized the significance of aligning with the nation's overarching policies and the UAE Centennial 2071 agenda. The Green Education Roadmap, with its core pillars, aims to seamlessly integrate sustainability and climate consciousness into the UAE's education system, embodying the innovative perspective of achieving sustainable development goals. Al Shamsi underscored the pivotal role of education in catalysing positive change and mitigating the impacts of climate change.

Together, this initiative marks a beacon of hope, as it endeavours to empower the youth, moulding them into active participants shaping a sustainable future for generations to come.

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## UGC SEEKS INPUT ON COMPULSORY INTERNSHIPS FOR UNDERGRADUATES

S. No.	Courses	Suggested Schedule	Duration	Suggested Activities	Credits
1	<ul style="list-style-type: none"> <li>3-year UG degree</li> <li>4-year UG degree (Honours)</li> <li>4-year UG degree (Honours with Research)</li> </ul>	After (4 <sup>th</sup> ) Semester	60 -120 hours	Hands-on Research Project Seminar attendance Read assigned journals to prepare for seminars Study certain entrepreneurs Social projects Study of the enterprises/ farmers	02-04
2	4-year UG Degree (Honours with Research)	8 <sup>th</sup> Semester	One Semester	(i) HEI may adopt Research Methodology, Research Tools and Techniques, Research Ability Enhancement and Policy Framework Courses (ii)Dissertation/Thesis/Project Work/Research project	08 12

The UGC has released draft internship guidelines for undergraduates, open for public input until November 12. Aligned with NEP-2020, these guidelines aim to create a structured internship and research system in Higher Education Institutions (HEIs) to boost employability and research skills. The UGC emphasizes the integration of these guidelines into the curriculum and credit framework for undergraduate programs (CCFUP).

Undergraduates in three-year programs must complete a mandatory 60-120 hour internship after the fourth semester, while four-year program students do so after the eighth semester. These internships can earn students up to 12 credits. The guidelines outline two types of internships: one for enhancing employability and the other for fostering research capabilities.

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## IIT MADRAS EMPOWERS RURAL SCHOOLS WITH 'DEVICE ENGINEERING LABS' AND 3D PRINTING

The Indian Institute of Technology, Madras (IIT Madras), has launched an initiative known as 'Device Engineering Labs' (DEL) to extend scientific and engineering knowledge to rural schools in Tamil Nadu. This initiative, driven by 'Teach to Learn,' aims to offer practical learning experiences in fundamental and advanced scientific concepts using a three-year curriculum for students in grades VIII to XI. The DEL initiative focuses on instilling a 'Culture of Making' at the school level by providing hands-on learning experiences and fostering design and fabrication skills.

The DEL labs house various inexpensive devices, aligning with school syllabus principles, aiming to enhance the students' understanding of everyday devices. The curriculum includes two main training components: Device Engineering Concepts and 3D Printing. The teaching approach is experimental and hands-on, primarily utilizing the FDM technique of 3D printing. The complexity of devices and printed objects increases progressively from the first to the third year, encouraging skill development.

Professor Pijush Ghosh, the project lead from the Department of Applied Mechanics and Biomedical Engineering, emphasized the importance of initiating a culture of 'Making in India' at the school level. The project also intends to nurture an entrepreneurial mindset, offering potential livelihood opportunities for students in the future. To develop the DEL initiative, around 200 postgraduate students from 25 research labs contributed by creating content for approximately 30 devices, designing teaching modules, including documentation and PowerPoint presentations, and conducting 'Train the Trainer' sessions. Currently, DEL labs are operational in 13 schools, mainly located in Chengalpet, Thiruvallur, Kancheepuram, and Krishnagiri, as part of the initiative by IIT Madras.

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## REVAMPING CBSE ACCOUNTANCY EXAM FORMAT: BOOSTING SUCCESS FOR CLASS 12 COMMERCE STUDENTS IN 2024



In a significant move, the Central Board of Secondary Education (CBSE) has recently announced a crucial alteration in the examination format for Class 12 Commerce students preparing for the 2024 board exams. The key change involves discontinuing the provision of printed formats in the Accountancy answer booklets, aiming to grant students ample time to complete their exams without the constraint of specific formats.

Previously, the answer booklets contained printed tables on the last pages for select questions, often causing confusion among students. This setup led to a time-consuming process, hampering students' ability to complete questions effectively. With this new change, students now have the flexibility to tailor formats according to their question-solving requirements, eliminating the previous struggle. The benefits of this alteration are multi-faceted. Not only will students be able to manage their time more efficiently, potentially yielding higher marks for their efforts, but it will also streamline the evaluation process for teachers. The change ensures clarity and a systematic approach to presenting answers in a designated section, enhancing the accuracy of evaluation.

This shift in the accountancy answer booklet pattern is a commendable stride by CBSE, prioritizing the ease of examinations and promising a more fruitful academic journey for students. Furthermore, it simplifies the evaluation process for teachers, aligning with the evolving needs of the education system and the accounting profession, ultimately enhancing overall student success.

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## REFORMING MULTILATERAL DEVELOPMENT BANKS: A VISION FOR A BOLDER AND MORE COLLABORATIVE FUTURE

The G20 expert group on strengthening multilateral development banks (MDBs) has put forth a comprehensive 30-point roadmap aimed at transforming these institutions into more impactful entities. Their objective is clear: to create "bigger, bolder, better" versions of MDBs. The proposed changes signify a paradigm shift from an approach centered around individual projects to a focus on programs identified by national governments. These programs will emphasize sectoral priorities and long-term transformation plans, aligning closely with the developmental goals of individual nations.

The report underscores the primary responsibility of governments in creating conducive environments for private investment. It stresses the need for transparency and stability over the long term, facilitating collaboration between domestic and international stakeholders, both public and private. The urgent priorities highlighted include the rapid transition to sustainable energy, enhancing resilience against climate change, addressing fragility, and bridging the significant gaps in achieving the Sustainable Development Goals (SDGs).

Co-convened by former US Treasury Secretary Larry Summers and India's 15th Finance Commission Chairman NK Singh, the expert panel recommends that MDBs focus on supporting countries in establishing and executing "country platforms." These platforms are voluntary mechanisms established by respective governments to encourage collaboration among development partners. This collaboration will be

based on a shared strategic vision and mutually agreed-upon priorities, fostering a more cohesive and efficient approach to development efforts.



Presently, these recommendations are being deliberated at the ongoing G20 finance ministers and central bank governors meeting in Marrakech. The expert group advocates not only aligning MDBs closely with national development goals but also creating multi-year programs in collaboration with nations. Additionally, the group emphasizes the active involvement of the private sector in MDB operations and a substantial increase in MDB funding.

In the initial volume of the report presented during the July meeting of G20 finance ministers and central bank governors, the expert group outlined a threefold agenda for reforming MDBs. This included significantly increasing sustainable lending levels to \$390 billion annually by 2030, adopting a triple mandate to eradicate extreme poverty, promote shared prosperity, and contribute to global public goods. The agenda also emphasized expanding and modernizing funding models to attract a wider range of investors through innovative means.

The expert group stresses tripling multilateral banks' lending limits by 2030, attracting private investors and introducing pooled portfolio guarantees, and advocates deepening collaborative efforts through country platforms, fostering cooperation through institutional mechanisms, and expecting early successes through shared tools and mutual standards recognition.

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## EMPOWERING INDIA'S FUTURE: NATIONAL STRATEGY ON ROBOTICS UNVEILED FOR GLOBAL LEADERSHIP

In a significant move towards technological advancement, Union Minister of State for Skill Development & Entrepreneurship and Electronics & IT, Rajeev Chandrasekhar, has unveiled the preliminary draft of India's National Strategy on Robotics. This visionary document marks a pivotal moment in India's technological trajectory, covering a wide spectrum from artificial intelligence to semiconductors and now, robotics. The draft, now open for public consultation, represents a collective endeavor to propel India into the global spotlight as a leading hub for robotics innovation.

At the heart of this strategy lies the recognition of India's vast potential in the realm of robotics. By harnessing this potential, the strategy aims to foster the growth of robotic technology, positioning India as a world leader. Emphasizing inclusivity and collaboration, the strategy solicits input from various stakeholders, including startups, manufacturing companies, and participants from the industry 4.0 landscape. The consultation process, facilitated through the MyGov platform, welcomes contributions until October 31, 2023.

Crucially, the National Strategy on Robotics identifies four key sectors of strategic importance: manufacturing, agriculture, healthcare, and national security. These sectors have been pinpointed as critical areas where robotics can revolutionize processes, enhance productivity, and significantly impact society. The strategy's underlying goal is to create an environment where innovative ideas can flourish, driving India's global leadership in robotics.

Minister Rajeev Chandrasekhar, while underlining the myriad advantages of this strategy, stated, "The national strategy on robotics policy will present significant opportunities for the manufacturing sector, Industry 4.0, and cyber-physical systems, among others. It has the potential to create a substantial impact on our society and economy." This statement underscores the transformative potential of robotics across various sectors, aligning with the larger vision of India's AI future.

In the global landscape, the significance of robotic automation has been acknowledged by

both public and private sectors. This acknowledgment is a testament to the role robotics plays in driving social, economic, and technical outcomes. Furthermore, advancements in artificial intelligence are expected to profoundly influence Cyber-Physical Systems (CPS), particularly in the realm of robotics. AI, as the catalyst, enables the interaction of the virtual world with the physical components of various systems, creating opportunities for unprecedented innovation and integration.

To realize the full potential of an AI-integrated society, the National Strategy on Robotics has been conceived as a pivotal component of IndiaAI. To facilitate India's emergence as a global leader in robotics, a comprehensive and efficient deployment plan has been proposed—the 'National Robotics Mission.' This mission hinges on the establishment of the Robotics Innovation Unit (RIU) as an institutional framework under IndiaAI.

The RIU is envisioned as an agile, responsive, and independent agency that will foster a dynamic ecosystem for robotics startups, research, and innovation in India. It will serve as a hub for collaboration and ideation, nurturing the growth of inventive concepts and technological breakthroughs. By adopting a holistic approach, encompassing Research and Development, Demonstration and Testing, Commercialization and Supply Chain Development, and Adoption and Awareness, the strategy aims to create robust domestic capabilities in robotic technology.

In essence, the National Strategy on Robotics represents a significant leap forward for India's technological landscape. It underscores the nation's commitment to fostering innovation, nurturing talent, and embracing cutting-edge technologies. Through collaborative efforts and strategic planning, India is poised to emerge as a global powerhouse in robotics, paving the way for a future where innovation knows no bounds. As stakeholders actively engage in the consultation process, they contribute not just to a policy framework but also to the shaping of India's technological destiny, ensuring that the nation stands at the forefront of the global robotics revolution.

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## AI FIRM FOUNDED IN 2022 BY 16-YEAR-OLD INDIAN IS NOW VALUED AT RS 100 CRORE

**P**ranjali Awasthi, a 16-year-old Indian prodigy, has made waves in the tech industry with her AI business, Delv.AI, marking a rapid entry into the field. She unveiled her creation at the Miami Tech Week event, disclosing that she established the business in January 2022 and successfully raised approximately \$450,000 (around Rs 3.7 crore) in funding. Notably, Delv.AI's LinkedIn page already lists a dedicated team of 10 specialists. Awasthi's interest in technology was ignited at a young age, influenced by her father's passion for advancing computer science education in the classroom. At the tender age of seven, she embarked on a journey to learn coding, laying the foundation for her remarkable career. When she was 11 years old, her family's move to Florida presented new opportunities. This relocation allowed her to enroll in computer science classes and engage in challenging math programs. However, it was her 13-year-old internship at Florida International University's research labs that served as a catalyst for her entrepreneurial journey. Throughout her internship, which coincided with the ongoing pandemic, Awasthi worked on machine learning projects and attended virtual high school. It was during this time that OpenAI launched the ChatGPT-3 beta, sparking the idea of using AI to expedite research data extraction and summarization. Delv.AI was conceived, with Awasthi's vision focused on leveraging machine learning to enhance data extraction processes and break down data silos. Awasthi's primary objective with Delv.AI is to assist academics in swiftly locating specific knowledge within the ever-expanding realm of online resources. Currently valued at around \$12 million (approximately Rs 100 crore), Delv.AI has secured \$450,000 (roughly Rs 3.7 crore) in funding.



## CHICKENS CAN BE MADE AVIAN FLU-RESISTANT BY GENE EDITING

**I**nvulnerable avian flu-resistant chickens may one day stop the disease from spreading on farms. Only minor changes to one gene were enough to make hens resistant to an avian influenza infection. The ANP32A gene gives chicken cells the instructions they need to produce a protein that flu viruses need on to successfully take over cells. Most genetically altered birds were prevented from contracting the avian virus by impeding its ability to commandeer the protein. Using the genetic editing tool CRISPR/Cas9, researchers altered ANP32A in two different ways to prevent the gene's protein from interacting with avian flu viruses. Two years of observation revealed that the edited chickens were healthy and lay eggs normally. The team then separated 10 normal and 10 gene-edited chicks into separate incubators before administering a dose of 1,000 infectious avian influenza particles directly the nasal cavity to each group of animals. A day later, ten sentinels were added to each of the two groups of 2-week-old chicks. Seven of the ten sentinels and all 10 of the unedited chickens contracted the virus and had high quantities of it in their bodies. The virus only infected one of the gene-edited birds. Low quantities of the virus were present in that modified bird that was infected, and none of the edited sentinels were exposed to the virus. The experiment was then repeated, but this time the researchers exposed the chickens to 1,000 times as much virus as the first time. The team combined exposed chicks with both edited and unedited sentinels. One unedited sentinel in the other incubator caught the virus after being exposed to five of the 10 modified chickens, but none of the edited ones. This shows that the animals weren't extremely contagious, even though the virus could infect chicks at large dosages.



## POTENTIAL THREAT ON ENVIRONMENT



**T**he lifespan of solar panels is predicted to be 25 to 30 years, and by 2030, the worldwide solar panel waste stream is likely to grow to 8 million tons annually. Lead, cadmium, and selenium are just a few of the dangerous compounds that can be found in solar panels. When solar panels are not properly disposed of, these components may seep into the groundwater and soil, endangering human health. Despite the fact that there aren't

many health dangers connected to solar panel trash. The risk of exposure is minimal unless the solar panels are broken or disposed of improperly due to the limited levels of harmful compounds present. Additionally, solar energy is a clean, sustainable form of energy that can aid in lowering air pollution and greenhouse gas emissions. In order to recycle solar panels and extract important minerals like silicon and silver, the solar industry is inventing new methods. This will lessen the negative effects of solar panel waste on the environment. By enacting laws that encourage solar panel recycling, governments can contribute to the reduction of waste from solar panels. Governments may, for instance, provide financial incentives to owners of solar panels who recycle their panels. By properly disposing of their solar panels, individuals can also contribute to the reduction of solar panel trash. The issue of solar panel waste is a rising one, but it is crucial to keep in mind that the advantages of solar energy exceed the hazards. When solar panels reach the end of their useful lives, they should be recycled at a licensed recycling plant.

## GROWTH OF C-COMMERCE MARKET

**T**his year's holiday season is expected to see e-commerce sales in India reach Rs 90,000 crore. The fact that this is a huge rise over the sales of Rs 76,000 crore from the previous year shows how popular online shopping is becoming in India. The yearly GMV of India's e-commerce industry is anticipated to increase by about 17% during the holiday season. This is a huge contribution that demonstrates how crucial the Indian holiday season is for e-commerce businesses. The rise in Indian customers' disposable income is one of the factors boosting e-commerce sales during the holiday season in India. Considering how popular internet buying is becoming among Indian customers, The e-commerce firms in India are anticipated to give substantial discounts of up to 60% during the forthcoming festive season sales due to the growing use of smartphones and the internet in India, as well as the alluring deals and discounts that are offered by e-commerce companies throughout the festive season. This is probably going to draw a lot of customers and increase sales for the e-commerce businesses. The rise in popularity of social media influencers and online retailers are a few other factors fueling India's booming e-commerce industry. Along with upgrading India's logistics and delivery infrastructure, vernacular content is becoming more widely available on e-commerce platforms. It is obvious that India's e-commerce market is expanding quickly, and the holiday season sale is a critical period for Indian e-commerce businesses.



## PV SINDHU SUCCESSFULLY NAVIGATES THE QUARTERFINALS

On Thursday, 12 October, Indian PV Sindhu defeated Chinese Taipei's Wen Chi Hsu in the women's singles round of 16 match at the Arctic Open 2023 tournament at the Vantaa Energia Arena in Finland. She won the match with a score of 21-11, 21-10, giving her three victories in a row over the No. 22 shuttler. At the Asian Games, the two players faced off in the round of 32, when the Indian shuttler likewise prevailed in straight games. The opening exchanges of PV Sindhu's second match against former world champion Nozomi Okuhara were similar to those of her maiden contest against Wen Chi Hsu in that regard. The Indian badminton player trailed by four points at the first break despite giving up three points before scoring one. For the rest of the match, PV Sindhu outplayed Wen Chi Hsu with her trademark attacking style of play. PV Sindhu won the opening game, jumped out to an early 8-1 lead in the second game, and won the match in 37 minutes. The 2023 badminton season will include PV Sindhu, a former world champion and two-time Olympian, who is vying for her maiden BWF championship. On Friday, she will compete in the BWF Super 500 event's quarterfinal round against Thuy Linh Nguyen of Vietnam. Later on in the day, Chinese player Wang Zhi Yi, the fifth-seeded player, defeated Aakarshi Kashyap. In men's singles, the Indian challenge came to an end. The Indian badminton player lost the match 21-15, 21-12, extending his losing record against Kanta Tsuneyama of Japan to three matches. In the meanwhile, fourth-seeded Lu Guang Zu of China defeated Kiran George 21-10, 22-20. Margot Lambert and Anne Tran, a French duo, narrowly defeated Tanisha Crasto and Ashwini Ponnappa 21-19, 21-19.



## INDIA KEEPS ITS RECORD INTACT: BEATING PAKISTAN IN ICC 2023-24 WORLD CUP



The 12th game of the 2023-24 ICC Cricket World Cup was the India vs. Pakistan match on October 14, 2023 and it was held at the Narendra Modi Stadium in Ahmedabad, India. Jasprit Bumrah was named Player of the Match after India defeated Pakistan by 7 wickets. After winning the toss, Pakistan decided to bat. With a 99-run partnership between Babar Azam and Mohammad Rizwan, they got off to a strong start. But after Rizwan went out, Pakistan lost 8 wickets, crumbling. After 42 overs, they were eventually dismissed for 191 runs. Ravindra Jadeja, Hardik Pandya, Siraj, K. Yadav, and Jaspreet Bumrah each claimed two wickets. Pakistan's team then went all out, for India to achieve the target of 192 for the win. India's response to it was unbelievable as they achieved the score in 30 overs with just 3 wickets lost. Shubman Gill and Virat Kohli each scored 16 runs, with Rohit Sharma leading the way with 86 runs for India. India's triumph against Pakistan in the World Cup match was a huge boost for the players. This will keep their tournament winning streak intact thanks to this match as well. India has played Pakistan eight times and has never suffered a loss. This demonstrates the team's commitment to the ICC Cricket World Cup. India is now on a winning streak. Rohit Sharma achieved the greatest number of hundreds in the World Cup during a recent match between India and Afghanistan as well, which India won. The team has a great chance of winning the world cup again after 2011 and bringing it home if things continue this way.

## INDIA LOSES TO MALAYSIA BY 2-4, EXITING THE MERDEKA CUP

India was eliminated from the Merdeka Cup football competition on Friday after losing to Malaysia 2-4 in the opening game, which was effectively a semifinal. Dion Cools gave Malaysia the lead in the first minute, but Naorem Mahesh Singh tied the score for India with a stunning volley in the thirteenth. Arif Amin was awarded a penalty in the 20th minute after Nikhil Poojary foolishly challenged him inside the Indian box. Amin converted the penalty with ease. Four minutes before halftime, Faisal Halim made the score 3-1 in favour of Malaysia, making things worse for India. In the 52nd minute, Sunil Chhetri scored a goal to cut the deficit to 2-3. Five minutes later, when Lallianzuala Chhangte was denied the equaliser, a great uproar ensued. Chhangte gained possession of the ball within the penalty area, and his shot rebounded off Ahmad's body and over the goal line before Cools could clear it, but the referee had other ideas. The entire Indian team, led by coach Igor Stimac, appeared incensed with the decision, and it was understandable given that replays amply demonstrated that the ball had in fact crossed the line. In the 61st minute, Malaysia added insult to injury for the unfortunate Indians when Corbin Ong completed the scoring from close range. The Blue Tigers suffered as a result of poor officiating and a pitch that was full of holes. In addition, two shots struck the crossbar. There are just three teams competing in the Merdeka Cup, commonly known as the "mini Asia Cup," with Tajikistan being one of them because conflict-torn Palestine withdrew at the last minute. On October 17, Malaysia will now face Tajikistan in the championship game.



## SAW PAAR SUCCESS: INDIA'S 2023 ASIAN GAMES TRIUMPH

This time, the resounding chant of 'Is baar saw paar' echoed throughout the Asian Games, and India achieved its goal. 107 medals, including 28 gold, 38 silver, and 41 bronze, have now been won by India at the 2023 Asian Games. The squash team won gold in the mixed doubles competition, while the archery team won gold in both the men's and women's team compound competitions. Indian athletes are on track to beat their previous greatest medal total from the 2018 Asian Games, which was 70 medals. India has had a very successful Asian Games. Archery, athletics, badminton, boxing, shooting, and wrestling are just a few of the sports in which the nation has excelled. India took first place in both the men's and women's team recurve events in archery. Chinese Taipei was defeated by the women's compound team of Parneet Kaur, Aditi Gopichand Swami, and Jyothi Surekha Vennam in the championship match by a score of 230-229. Atanu Das, Pravin Jadhav, and Jayanta Talukdar's male team recurve team won the competition's championship match against South Korea 6-2. In the squash championship, Malaysia was defeated by the mixed doubles pair of Dipika Pallikal and Harinderpal Singh Sandhu. The accomplishments of the Indian athletes at the Asian Games in 2023 have given the nation immense pride. They have demonstrated that Indian athletes can compete at the very top levels in a wide range of sports. Their accomplishments serve as an example for present and upcoming generations of athletes and will support the growth of sports in India.



## EXPERT



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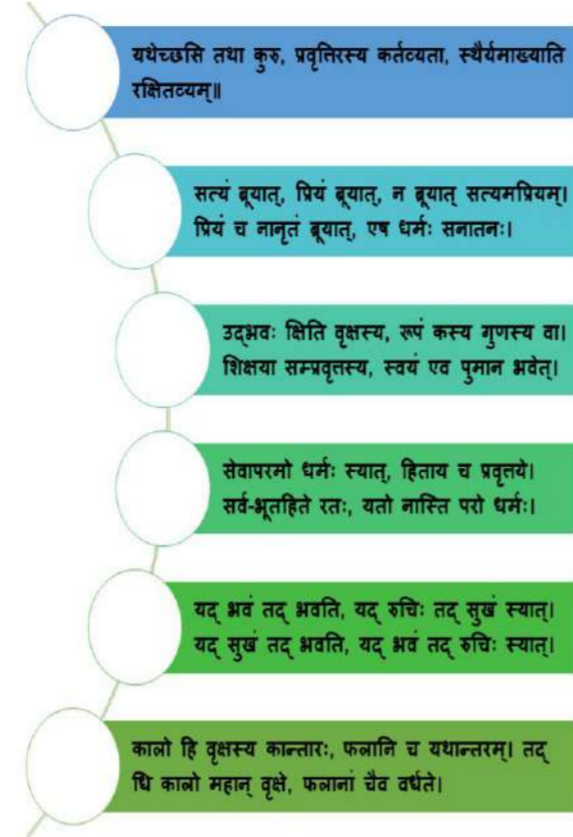
### FAQs ON

### Learning and Development through Ancient Indian Wisdom

#### Q. What is the relevance of vision in regulation of our behavior?

**Ans.** Awareness of a vision that motivates behavior is the conscious understanding of a purpose or goal that drives and directs an individual's actions and choices. It involves being cognizant of the underlying values, aspirations, and ideals that shape behavior and decision-making processes. This awareness serves as a wellspring of inspiration, providing a profound sense of meaning, direction, and motivation in life. The awareness of a vision that motivates behavior can take various forms, contingent upon individual beliefs, values, and personal objectives. Here are several key facets:

**1) Clarity of Purpose:** Essential to this concept is a clear vision of what one seeks to achieve or contribute to in life. It necessitates the definition of specific goals, aspirations, or ideals that deeply resonate with personal values and interests. This clarity empowers individuals to focus their energy, prioritize their efforts, and make decisions aligned with their vision. In the realm of Sanskrit wisdom, a profound subhashitham unveils the essence of clarity of purpose: "Yathechhasi tathā kuru, Pravrittirasya



kartavyatā, Sthairyamākhyāti rakshitavyam||" Meaning: "As you desire, so shall you act, the duty lies in engaging with determination, Steadfastness is proclaimed as a safeguard". This subhashitham highlights the significance of having a clear vision, aligning actions with aspirations, and embodying steadfastness in the pursuit of one's purpose.

**2) Values and Principles:** A robust awareness of one's values and principles acts as a moral compass that guides behavior. These values may encompass integrity, compassion, honesty, fairness, and respect. They inform ethical decision-making and

influence how individuals interact with others, make choices, and navigate challenges. "Sathyam bruyat, priyam bruyat, na bruyat sathyam apriyam. Priyam cha nanrutam bruyat, esha dharmah sanatanah." Meaning : "Speak the truth, speak what is pleasant, but do not speak the truth that is unpleasant. Do not speak what is pleasant but untrue, this is the eternal code of conduct." This subhashitham highlights the significance of values and principles in guiding behavior and decision-making. It encapsulates the timeless and universal principle of adhering to truth while considering the impact of one's words.

**3) Personal Growth and Self-Actualization:** The awareness of a motivating vision often corresponds with personal growth and self-actualization. It entails a commitment to realizing one's full potential, nurturing talents and skills, and continuously refining oneself. This vision spurs individuals to engage in learning, self-reflection, and practices that facilitate self-development, enabling them to become the best version of themselves. "Udbhavah kshiti vrikshasya, roopam kasya gunasya vā. Shikshayā sampravrittasya, svayam eva puman bhavet." Meaning: "Just as the tree's growth is inherent, beauty stems from its qualities. Likewise, through learning and self-effort, a person transforms themselves." This subhashitham highlights that like a tree's inherent ability to grow, an individual's development is rooted in their qualities and virtues. It emphasizes the importance of self-initiative and continuous personal development as a means to become the best version of oneself.

**4) Contribution and Impact:** Many individuals are propelled by a vision of effecting positive change in the world and leaving a lasting impact. This awareness inspires behavior aimed at serving others, engaging in philanthropy, or participating in social activism. It encourages individuals to contribute to their communities, address societal challenges, and foster collective well-being. "Sevāparamo dharmah syāt, hitāya cha pravṛttaye. Sarva-bhūtahite rataḥ, yato naasti paro dharmah." Meaning: "The highest duty is in service, for the welfare of others. Engaged in the well-being of all beings, there is no greater righteousness." This

subhashitham states that the highest duty lies in serving others and working for their welfare. It encourages individuals to prioritize the well-being of their communities, address societal challenges, and promote collective welfare as an integral part of their vision and motivation.

**5) Alignment with Passion and Interests:** The awareness of a motivating vision often aligns harmoniously with one's passions, interests, and areas of expertise. When individuals engage in activities that deeply resonate with their vision and ignite their passion, they are more likely to experience a profound sense of fulfillment, enthusiasm, and intrinsic motivation. "Yad bhavam tad bhavati, yad ruchih tad sukham syāt. Yad sukham tad bhavati, yad bhavam tad ruchih syāt." Meaning: "What you become, that becomes your nature, What you find pleasure in, that brings you joy. What brings you joy, that becomes your nature, What becomes your nature, that brings you pleasure." This subhashitham states that what an individual becomes, their nature and essence, is shaped by their pursuits and aspirations. This subhashitham underscores the importance of pursuing activities that resonate with one's vision and interests, as they bring both pleasure and a sense of purpose.

**6) Long-Term Perspective:** A vision that motivates behavior frequently encompasses a long-term outlook. It transcends immediate gratification or short-term goals, embracing a broader perspective of life's purpose and impact. This awareness empowers individuals to make choices that align with their long-term vision, even if it necessitates perseverance, sacrifice, or delayed gratification. "Kālo hi vṛkshasya kāntāraḥ, phalāni cha yathāntaram. Tad dhi kālo mahān vṛkṣe, phalānām chaiva vardhate." Meaning: "Time is the hidden abode of a tree, and fruits ripen in due course. Indeed, time is the great nurturer of the tree, as well as the growth of its fruits." This subhashitham conveys the significance of a long-term perspective and the role of time in the fulfillment of a vision. Just as a tree requires time to grow and bear fruits, individuals need to recognize the importance of patience, perseverance, and delayed gratification in the pursuit of their long-term vision. It emphasizes that time acts as a nurturing force, facilitating the growth and fruition of endeavors aligned with a greater purpose.

In summary, awareness of a vision that motivates behavior imparts individuals with a profound sense of purpose, direction, and inspiration. It encompasses clarity of purpose, values, personal growth, contribution, alignment with passion, and a long-term perspective. Vision awareness guides individuals in their decision-making processes, shapes their behavior, and engenders a sense of fulfillment and meaning in life. Stay blessed!

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DM your questions on our instagram handle  
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Please note: Only selected questions will be answered in the next issue of The HULAHUL Times.

# QUIZ TIME

1. What is India's position in the Global Hunger Index?
2. Who was honored with the 'Saraswati Samman' in 2022 for the memoir "Surya Vamsam"?
3. Which government has prohibited pro-Palestinian demonstrations?
4. Who has assumed the role of Chairman of the Advertising Standards Council of India (ASCI) in October 2023?
5. Who has been named the recipient of the 2023 SASTRA Ramanujan Prize for their exceptional contributions to mathematics?
6. In October 2023, which country clinched the South Asian Football Federation (SAFF) Under-19 Championship 2023?
7. Where is Kailvel Lake situated?
8. Which river runs along the border between the United States of America and Mexico?
9. Who has been appointed as the new Chairperson of the Union Public Service Commission?
10. Among the following Indian states, which one lacks a broad gauge railway network?



1. What has a net but cannot catch a ball?
2. I am taken from a mine, and shut up in a wooden case, from which I am never released, and yet I am used by almost every person. What am I?
3. What is always in front of you but can't be seen?
4. What is always in the middle of the field but never moves?
5. I am an odd number. Take away one letter, and I become even. What am I?
6. I am a word of letters three, add two, and fewer there will be. What am I??

ANSWERS

1. 111
2. Sivasankari
3. French
4. Saugata Gupta
5. Ruixiang Zhang
6. India
7. Tamil Nadu (India)
8. The Mississippi
9. Dr. Manoj Sony
10. Sikkim

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For Internship

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1. A tennis racket
2. A golf ball
3. The future
4. The midfield line in soccer
5. Seven
6. Few

ANSWERS

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