PRAJYA

MONTHLY NEWS MAGAZINE FOR CHILDREN

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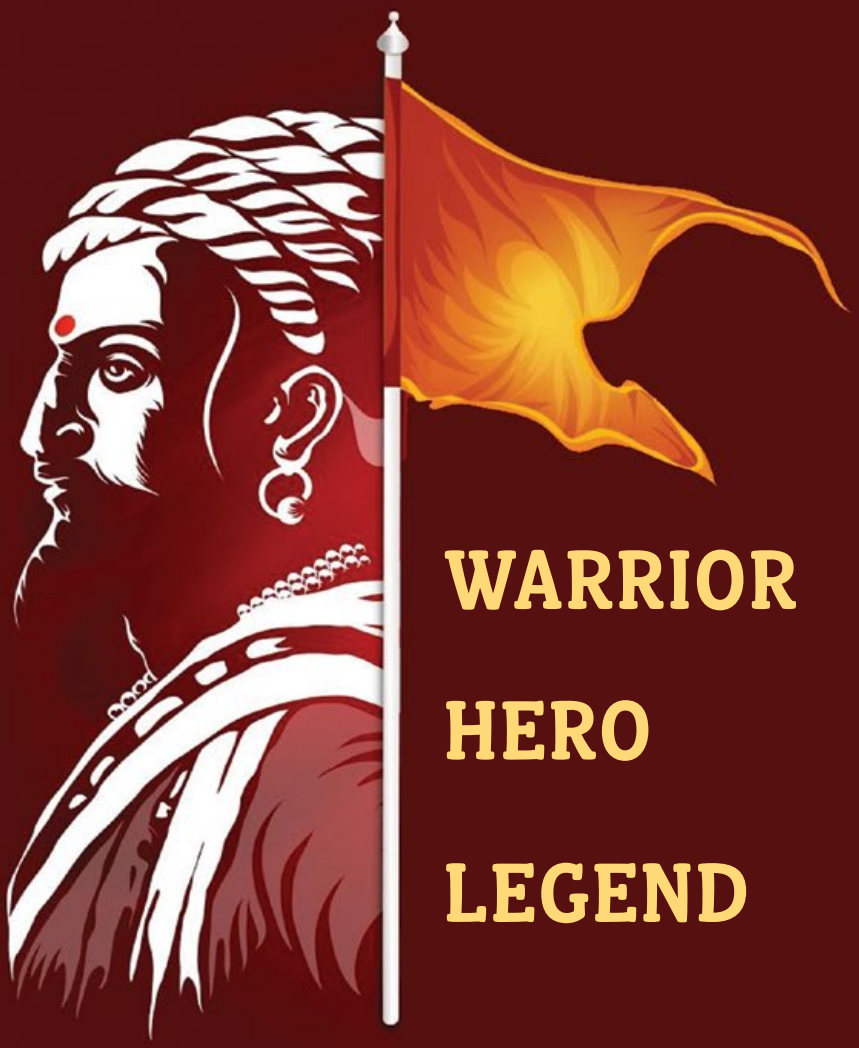
Operation Ganga

Chhatrapati Shivaji Maharaj Jayanti

Sunday, 19th February



WARRIOR

HERO

LEGEND

In 1674, formally crowned as Chhatrapati(Monarch) of his realm in Raigad

Pioneered guerrilla warfare methods referred to as Shiva Sutra

Built a strong NAVY to protect Goa and the Konkan coast

Was a Scholar of Sanskrit and eight other languages

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FROM THE EDITOR'S DESK

कर्ता कार्यति चैव परकेश्च अनुमोदकः।
सुकृतेदष्कृते चैव चत्वारः समभागनिः।।

This shloka scrutinises the dynamics behind every deed and talks about intentions, motives, inspiration and approval.

Behind every action, there is the involvement of four personages:

1. The doer who performs the act
2. The one who is responsible for gettingthe act done
3. The one who instills the motive or inspiration to perform the act
4. The one who supports or approves the act

This is equally applicable for good and bad acts.

Modern consumerism has resulted in the generation of mindboggling amounts of waste. Ugly landfills are an eyesore on the landscape of metropolitan cities. However, there are amazing success stories of converting waste to energy by cities like Istanbul and we see similar initiatives being undertaken in our own country too, in cities like Jaipur. Operation Ganga was a shining example of a good act that brought relief and safety to thousands in the midst of a raging war. Breakthroughs in crop residue management is another positive development. When intentions are right, the results are most likely to be right too.

In legal matters, we see that criminal law also gets into the constituents of a crime while studying a case and goes beyond the surface.

Read, reflect and revert with your thoughts and feelings.

We look forward to your support and suggestions.

- Editorial Team

Dear Readers,

There have been requests from quite a few readers for hard copies of Prajya. We understand that quite a high percentage of our young readers keep revisiting some articles, and a handy print version within reach induces one to read more often, highlight things and make notes. This also partly contributes to students spending less screen time. The Prajya team is happy to bring to you the issue in print.

However, there are few things that we want to be careful about:

A. We don't want to print more than what is required and

B. Keep the cost of the print version (plus postage) within reasonable limits.

Please note that the access to free online e-version will continue.

So, it will greatly help us if you could fill in the details in the link provided.

http://bit.ly/Prajya

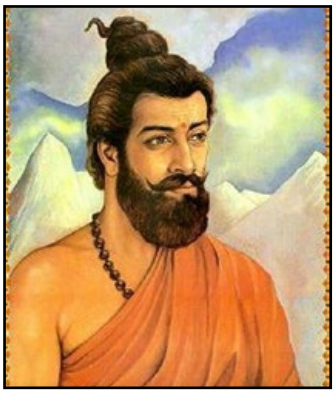
Happy Reading !

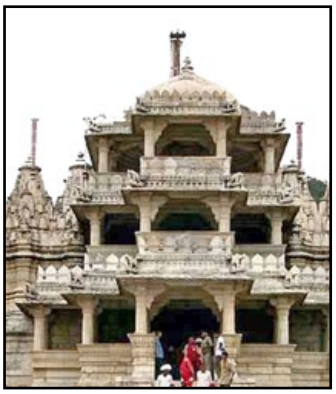
Watch out for the Monthly Prajya Quiz online

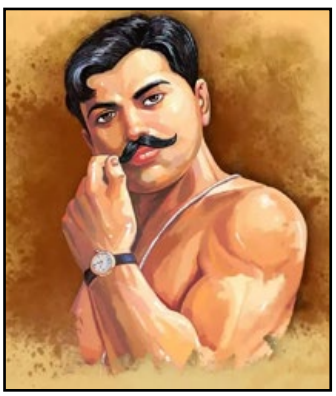
Visit https://davchennai.org/publications/prajya-news-magazine/

Content

National Current Affairs







General Knowledge

Shri Sridhar P

WASTE TO WATTS:

Electricity from garbage in Istanbul

Historically significant Istanbul, the cultural capital of Turkey has successfully implemented its **Waste to Watts** programme that produces electricity from 14000 tonnes of waste, using innovative technology benefiting about 2 million residents.

Waste production is a part of life process. Amongst non-humans disposal of waste is never a problem because it is largely organic and nutrients are recycled 100 %. As long as man remained a hunter gatherer or practised subsistence farming, this was not acute. Modern industrial way of life produces mammoth amounts of waste that increases with rising incomes. The colossal amount of waste generated by humans poses a great challenge.

Landfills: Most mega cities have established carefully constructed landfills, far away from densely populated neighbourhoods. There is an acute pressure on landfills the world over due to various reasons. Istanbul too has its share of landfills and problems, but is generating electricity using innovative techniques.

Waste production is a part of life process. Amongst non-humans disposal of waste is never a problem because it is largely organic and nutrients are recycled 100 %.

What happens in a landfill?

Phase 1: Aerobic biodegradation with the help of microbes takes place. Biological oxygen demand goes up tremendously.

Phase 2: Anaerobic biodegradation of the contents of the landfill starts once oxygen level goes down significantly. This is when there is emission of effluent gases like methane and carbon-di-oxide.

Phase 3: Hydrolysis of the partially degraded contents takes place, leading to accumulation of VFA (volatile fatty acids) in the leachate. Volatile organic compounds are converted to acetic acid, butyric acid etc., carried out by acidogenic microorganisms, resulting in lowered pH of the contents.

Phase 4: Acetic acid, butyric acid and propionic acid are converted to methane and carbon-di-oxide. The acidic landfill slowly reverts to normal pH. This is the longest phase.

How Istanbul is cashing in on landfill chemistry

Biodegradation of the landfill mass finally produces methane, a powerful greenhouse gas. Istanbul (5300 sq km) is a mega city of 15 million people. The per capita GDP of Istanbul is about USD15000. That means per capita trash production can be expected to be high. Istanbul environment management and trade (ISTAC) collects some 14000 tonnes of garbage generated by the residents of Istanbul and empties it in carefully constructed landfills at Odayeri, Seymen and Komurcuoda. These landfills are lined suitably with corrosion-resistant material. Perforated pipes are laid at the bottom to transport the methane to a facility with steam turbines to generate electricity.

This is benefitting 2 million residents by producing 340 million KWH of electricity annually. This is worth pondering because Istanbul has 20 % of Turkey's population. The supply of raw material involves no mining; only the segregation of waste, which in turn is a money spinner that lessens the load for new virgin material. An efficient recycling programme is known to contribute less to the emission of greenhouse gases. Turkey's recycling rate is just 12% compared to Germany's 60%. It is commendable that Istanbul has achieved this feat.

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Shri Sivakumar R

80% of India's exports to the UAE likely to be DUTY FREE

The Agreement aims at increasing bilateral trade to USD 100 Billion, in the next 5 years from USD 60 Billion now.

Hello, Members of Generation Next !

India and UAE signed a Comprehensive Economic Partnership Agreement (CEPA) on 18th February 2022. This is the first Free Trade Agreement finalized by this government.

The UAE which is actually a federation of seven emirates, consisting of Abu Dhabhi, Dubai, Ajman, Fujairah, Ras Al Khaimah and Umm Al Quwain is currently India's third largest trading partner and the second largest export destination after the USA. India is the UAE's second largest trading partner and the largest in terms of exports.

Under this agreement it is estimated that at least 80% of our exports to UAE would be duty free in that country. The Agreement aims at increasing bilateral trade to USD 100 Billion, in the next 5 Years from USD 60 Billion now. Some of our sectors that are likely to benefit from CEPA include Gems & Jewellery, Textiles, Engineering Products, Pharmaceuticals, Medical Devices, Automobiles, Leather, Sports Goods and Furniture.

To protect the interests of domestic producers, India has kept items like Dairy, Fruit, Tea, Coffee Dyes, Tyres, Toys, etc., out of the CEPA.

India will be able to export textiles worth an additional USD 2 Billion in the next 2 years and treble plastics exports. Gold Jewellery exports are likely to balloon up to USD10 Billion annually by 2023-24 from the current level of USD 1.20 Billion.

Exports of engineering goods including items like washing machines, ACs and refrigerators are likely to double to USD 9.2 Billion over the agreement period. Annual plastics exports are expected to rise to USD 1.3 Billion from USD 418 Million in FY 2021 over the next 5-year period.

The CEPA is likely to particularly help labour intensive sectors like Textiles and Garments, Leather and Footwear and Agriculture where Indian exporters generally operate with thin margins and compete with low-cost economies like Bangladesh and Vietnam.

To protect the interests of domestic producers, India has kept items like Dairy, Fruit, Tea, Coffee Dyes, Tyres, Toys, etc., out of the CEPA.

“ In addition to goods the CEPA also covers 11 service sectors and 100 sub sectors, including business services, telecommunications, construction, education, tourism, nursing, finance etc.

There are also stringent rules of origin conditions. At least 40% Value Addition has been mandated to avoid routing of products predominantly manufactured in a third country.

In addition to goods the CEPA also covers 11 service sectors and 100 sub sectors, including business services, telecommunications, construction, education, tourism, nursing, finance etc.

The CEPA is likely to create 5 lakh new jobs in India and over 1 lakh new jobs in UAE.

All in all, one more step towards making our Bharat Mahaan !!!

Kum Anu Narayan

Commercialization of HYDROGEN FUEL CELLS in India

To evaluate commercialization of hydrogen fuel cells in various mobility and industrial applications in India, **Adani Group has signed a non-binding Memorandum of Understanding (MoU) with Canada's Ballard Power Systems.**

Both parties will examine potential collaboration for fuel cell manufacturing in India, along with various other options for cooperation.

"Hydrogen is rapidly becoming a critical medium for the decarbonization of energy, industry and mobility", Adani Group said. Through accelerated investment in renewable energy, the company aims to be one of the largest green hydrogen producers in the world.

Adani New Industries Limited (ANIL), the newly formed subsidiary of Adani Enterprises, will focus on generation of green hydrogen including downstream products, manufacture of electrolysers and wind turbines, and green electricity generation. "We will be deploying innovative use cases across our businesses with fuel cell trucks, mining equipment, marine vessels, off-road vehicles and critical industrial power," said Vneet S. Jaain, Director of ANIL.

Ballard Power Systems is a manufacturer of zero emission proton exchange membrane (PEM) fuel cell products which enable electrification of mobility such as passenger cars, commercial and forklift trucks, buses and trains.

Kum Anu Narayan

New Offshore Wind Power Projects

To explore the potential of joint offshore wind projects in India, Tata Power has partnered with Germany's multinational energy firm, RWE Renewables after they signed a corresponding Memorandum of Understanding (MoU).

This partnership comes in the wake of the central government's announcement to achieve 30 gigawatts (GW) of offshore wind installations by 2030 to meet the country's increasing energy demands.

India's 7,600 km coastline is an attractive market for wind farms. RWE Renewables has global expertise in operating offshore wind projects, while Tata Power Renewable Energy Limited has deep, local roots. Their complementary strengths could contribute to a real momentum in harnessing India's excellent wind resources.

Kum Kavya R

Praggnanandha beats World Champion Magnus Carlsen

At 16, Praggnanandha is the third Indian who defeated Carlsen in tournament play - after Viswanathan Anand and P Harikrishna.

Praggnanandha, India's second youngest Grandmaster defeated Magnus Carlsen at the Airthings Masters, a 16-player online rapid tournament. It is the first leg of the Play Magnus group-run Champions Chess Tour and each player has 15 minutes for all moves plus a 10 second per move increment. One gets three points and USD750 for a win, while a draw earns 1 point and USD250.

Magnus Carlsen

Norwegian chess Grandmaster Sven Magnus Carlsen is the reigning five-time World Chess Champion. Praggnanandhha's win is a huge boost to his confidence.

At 16, he is the third Indian who defeated Carlsen in tournament play - after Viswanathan Anand and P Harikrishna. Especially after losing the first 3 games with Carlsen on the first day, the final match was looking bleak.

On move 32, which looked like an equal endgame, Carlsen made a tactical blunder where he trapped his own Knight by pushing it to the C3 square.

After seven calculated moves, the victory was the teenager's! "It was a quality game. Praggnanandhaa was playing black pieces and won. That is also a big thing as a white-piece player is normally on the advantageous side," said Ramesh, Praggnanandha's coach.

Despite the momentous win, Praggnanandha didn't qualify for the knock outs as he ended up in the 11th position while only those in the first 8 positions qualified. But this will tremendously boost his confidence to scale higher.

Col Shashidhar M V (Retd)

Why did INDIA abstain from voting on UKRAINE?

Today, 60% of India's military hardware inventory is from Russia or the former Soviet Union.

It is difficult to guess all the future consequences of the Ukraine - Russia conflict. Events are unfolding rapidly, making predictions riskier.

India does not endorse the military occupation of any sovereign state or recognize the independence of Ukraine's breakaway provinces of Donetsk and Luhansk. India for that matter never accepted the illegality of the creation of Pakistan Occupied Kashmir (POK) or even of Kashmir's territory being ceded by Pakistan to China (Aksai Chin).

India thus exercised its right to abstain from voting in the UNSC, taking into account the need for stable relations with the Russian Federation and the utmost priority it attaches to Operation Ganga, aimed at securing the safe evacuation of the thousands of Indian students who remain stranded in a war-torn country. India also believes in humanity and hence offering of humanitarian assistance to the people of Ukraine was in accordance with its ancient ethos.

The Russian move and its implications for India

India's reliance on Russian defence hardware is well documented. Today, 60% of India's military hardware inventory is from Russia or the former Soviet Union, and the bulk of India's license-based defence manufacturing comes from Russia notable among these being

- BrahMos cruise missiles
- AK-203 assault rifle
- "Akula" nuclear-powered attack submarine
- Future production of Sukhoi Su-30MKI fighter aircraft
- T-90MS main battle tanks.

The imposition of wide-ranging and unprecedented sanctions against Russia by the US, UK and the EU including withdrawal of SWIFT facilities for Russian banking institutions will force Russia to turn to friendly nations. This opens up new opportunities for India and Russia to engage in rupee-rouble barter trade. The volatility in global energy prices highlight the pressing need for India to make the transition towards renewables, particularly green hydrogen. Since energy imports from Saudi Arabia and the US will inevitably prove more expensive, India will continue to import from Russia to meet its energy demands.

If India had to take a position favouring either Russia or Ukraine/ US, the safe repatriation of Indian nationals from Ukraine would have been jeopardised.

India's stand - safeguarding its legitimate security interests

The biggest lesson that we can learn from the Russia-Ukraine war is to have clear and unambiguous national interests. India has adopted a balanced and middle-of-the-road diplomatic approach on the Russia-Ukraine confrontation.

India has ensured that its strong relations with both USA and Russia are fully safeguarded. India and the US enjoy a comprehensive, global, strategic partnership; and over the last two decades US is India's biggest trade partner and a significant supplier of technology, sophisticated defence equipment and investment. In the strategic arena, it is a valued ally in the Quad and Indo-Pacific to counter the aggressive and expansionist posture of China.

As regards Russia, India shares a very special and privileged strategic partnership. It has been a long standing and time-tested partner for India and the forged relations with Russia constitute a key pillar of India's foreign policy. In addition, Russia is a valued partner in the areas of nuclear energy, hydrocarbons and space.

India's growing global profile and status lends greater weight and credibility. By abstaining in the UNSC and UNGA by staying neutral, India was not abdicating its responsibility but only advancing its interests and ensuring peace, security and stability of all countries by advocating the path of dialogue and diplomacy, adherence to the UN Charter and principles of territorial integrity and sovereignty.

CONCLUSION

Russian – Ukranian crisis is not of India's making. Though an invasion is an extreme act, the actions of all the stakeholders over the years have created this situation of breakdown of diplomacy. India has excellent relations with all the actors involved in this imbroglio. Whatever the contours of resolution of this war, the mutuality of India's interests with all these partners will remain important.

The overriding priority for India was the safe and early repatriation of its 21,000 nationals from Ukraine. If India had to take a position favouring either Russia or Ukraine/US, the safe repatriation of Indian nationals from Ukraine would have been jeopardised.

Col Shashidhar M V (Retd)

OPERATION

As the Russia-Ukraine war started to rage, a large diaspora of Indians (mainly students) especially those studying medicine in Ukraine found themselves in a traumatic situation when Ukraine closed its airspace as a security measure.

15th February 2022

GOI issued its first advisory asking its citizens to "temporarily leave Ukraine". Approximately 4000 left Ukraine before the closure of airspace. As Russia brought major cities, including Ukrainian capital Kyiv under siege, India commenced its air evacuation and logistics efforts through "Operation GANGA".

The Process

Evacuation is not just a logistical exercise, involving transportation but about strategic resolve, humanitarian perspective, quick response and above all a multilateral and multi-pronged diplomatic outreach.

26th February 2022

India launched the biggest-of-its-kind operation to bring back its student community and other nationals. PM Modi in a phone call, urged Ukrainian President Volodymyr Zelenskyy to ensure the safety of students.

The evacuation process involved:

(a) getting Indians from Ukraine to the land border of a neighbouring country

(b) helping them cross the land border

(c) helping them clear immigration or other formalities at border check-posts

(d) helping them travel to the embarkation site

(e) finally ensuring they board their relevant flights to India from there.

Orchestration of Humanitarian Relief

27th February 2022

The first flight brought home 219 Indians from Romania's capital Bucharest to Mumbai. Other flights carried up to 250 Indians each from Bucharest.

Union Ministers Hardeep Singh Puri, Jyotiraditya Scindia, Kiren Rijiju and V.K. Singh were personally deputed by PM Modi to Hungary, Romania, Moldova, Slovakia and Poland to assist in prioritizing coordination with local authorities. The IAF and multiple private airlines (Air India, IndiGo, Air India Express, SpiceJet, AirAsia India and Go First) were pressed into service.

Indian missions in Poland, Romania, Slovakia and Hungary commenced arrangements to receive Indians from Ukraine and fly them out of their respective countries. The estimated cost of a two-way evacuation flight was reportedly more than Rs 1.10 crore.

28th February 2022

Ministry of External Affairs (MEA) advised all Indian citizens in Ukraine to move to safety and seek shelter in the towns of western Ukraine and only go to the border after coordinating with Indian authorities. Multiple information dissemination and communication channels namely 24x7 Control Centres (email, fax, phone numbers) were set up to assist in the evacuation of Indians through Ukraine's border crossing points with the four countries. GOI also created a dedicated Twitter account named Op Ganga Helpline to assist in the evacuation by sharing important advisories and instructions. The Indian Community Welfare Fund for Indian citizens in other countries in distress was activated.

The Union Health Ministry, on humanitarian grounds, also revised the mandatory international travel guidelines for all Indians allowing them to board flights without a negative RT-PCR report or vaccination certificate.

GOI, through its National Disaster Response Force (NDRF) stocks began sending batches of relief material - medical aid, tents, blankets, sleeping mats and solar lamps.

Indian Embassy in Ukraine pro-actively asked all Indians stuck in the conflict zone to fill up an online Google form with details of their name, e-mail, phone number, address of current stay, passport details, gender and age and current location.

GANGA

10th March 2022

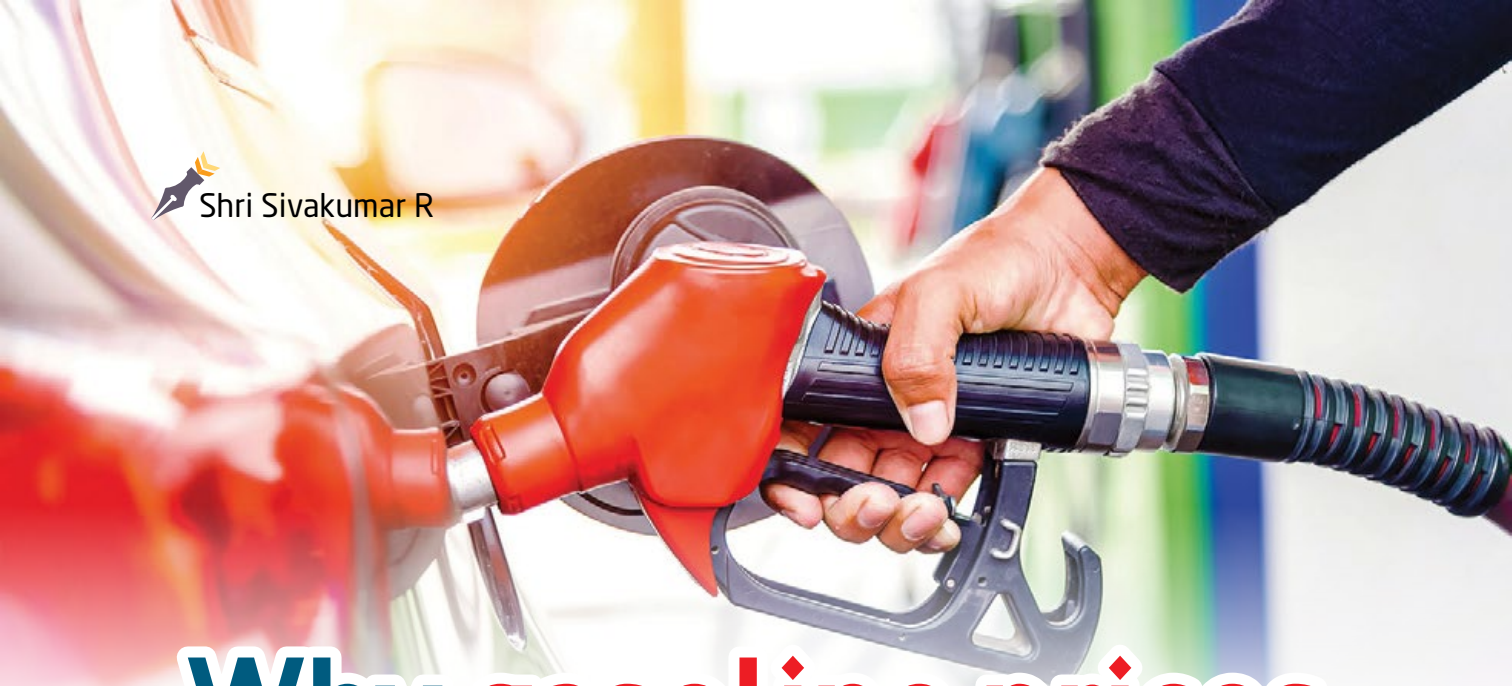
About 600 stranded from Ukraine's Sumy were brought to Rzeszow airport in Poland via buses and then were finally brought back to India via three flights, accomplishing the operation.

In line with India's principle of ***Vasudaiva Kutumbakam***, 147 foreign nationals of 18 countries from conflict zones were brought to India. Many Ukrainian nationals who were family members of Indian nationals also got evacuated.

Operation Ganga was an unprecedented saga of grit, compassion and diplomatic heft by GOI and its willingness to go the extra mile with speed and precision has made all the difference in ensuring its stellar success.

Jai Hind!

Shri Sivakumar R



Why gasoline prices have soared to record highs?

Considering the inflationary impact of an increase in petroleum product prices, GOI has been very cautious in raising the retail prices of petrol and diesel.

As you will no doubt be aware, India imports about 85% of our petroleum requirement and therefore domestic fuel prices are directly linked to international oil prices.

State-owned Oil Marketing Companies (OMCs) kept the prices of both petrol and diesel constant since 4th November 2021, when the GOI announced a ₹5 per litre cut in excise duty on petrol and a ₹10 per litre cut in excise duty on diesel.

The freeze in price revisions continued in the run-up to the Assembly elections in five states earlier this month. Ordinarily, the prices of petrol and diesel are revised daily, in line with a 15-day rolling average of benchmark prices of petroleum products.

After 24th February, when Russia invaded Ukraine, global crude prices surged to their highest in nearly a decade. International oil prices jumped from about USD 81-82 a barrel in early November 2021 to about USD 114 now.

Petrol prices in Chennai which was ₹101.38 on 5th November 2021 has been raised to ₹102.16 per litre, which is an increase of less than 1%, when global oil prices have risen up by about 40% in the same period.

Considering the inflationary impact of an increase in petroleum product prices, GOI has been very cautious in raising the retail prices of petrol and diesel. However, given the current geo-political situation, and the current quantum of price increase, further price increases cannot be ruled out.

Shri Krishna Kumar C S

GABRIEL BORIC FONT

youngest President for CHILE

Republic of Chile, located in the western part of South America, is the southernmost country in the world, the closest to Antarctica.

36-year-old Gabriel Boric Font took oath as the new President on 11th March 2022. A student of Law, he rose into prominence when he played a leading role in the 2011 – 2013 Chilean student protests. He was the president of the University of Chile Student Federation (2011-2012). How he handles Chile's current financial challenges would be interesting to watch.

Shri Krishna Kumar C S

YOON SUK-YEOL

new President of SOUTH KOREA

The Republic of Korea is a democratic country in the southern part of the Korean peninsula.

The two main political parties in S.Korea are the Democratic Party of Korea (Liberals) and the People Power Party (Conservatives).

In a tightly fought Presidential election, the leader of Conservative Party Mr. Yoon Suk-yeol defeated the liberal candidate, Mr. Lee Jae-myung.

This victory will bring about a 'U' turn in the foreign policy of the country. It will boost the American – Korean alliance and strengthen their defence against the dictatorial and militarist N. Korea.

Smt Meenakshi S

WORLD SUSTAINABLE DEVELOPMENT SUMMIT

Over 1,200 scientists, sociologists, economists and engineers engage in and implement insightful, high-quality action-oriented research and transformative solutions.

PM Modi delivered the inaugural address at The Energy and Resources Institute's (TERI) World Sustainable Development Summit 2022. Established in 1974, TERI researches and provides knowledge to governments and international institutions in the areas of energy, environment, forestry, biotechnology, as well as in the conservation of natural resources. Over 1,200 scientists, sociologists, economists and engineers engage in and implement insightful, high-quality action-oriented research and transformative solutions supported by the state-of-the-art infrastructure.

The World Sustainable Development Summit brings together thought leaders, heads of state, scholars, corporates, youth groups and civil society representatives from across the world to address some of the most relevant issues concerning sustainability. The 21st edition of the annual event was organised in a virtual format.

The Summit deliberations focused on the umbrella theme: **'Towards a Resilient Planet: Ensuring a Sustainable and Equitable Future'**. In his address the PM stated that energy requirements are expected to double in the next 20 years and sought the help of developed nations for finance and technology transfer.

He also stated that through the International Solar Alliance, the aim of India is to attain **One Sun, One World, One Grid.** He added we must work towards ensuring availability of clean energy from a worldwide grid everywhere at all times.

Various government schemes that worked towards the cause were highlighted: Ujjwala Yojana, PM-KUSUM scheme, renewable energy to farmers' solar panels, stand-alone solar pumps, chemical-free natural farming, LED bulbs distribution scheme, The National Hydrogen Mission which aims to tap into green hydrogen.

Smt Meenakshi.S

Kala Ramachandran

Gurugram's first woman Police Chief

The 1994-batch, Haryana-cadre IPS officer Kala Ramachandran took over as Gurugram's Police Commissioner. She worked earlier as Superintendent of Police in Rewari, Fatehabad and Panchkula districts.

She was also on central deputation to the Intelligence Bureau from 2001 and headed the North Eastern Police Academy in Meghalaya. She returned to Haryana and served as Additional Director General of Police (Crime Against Women Cell and Vigilance).

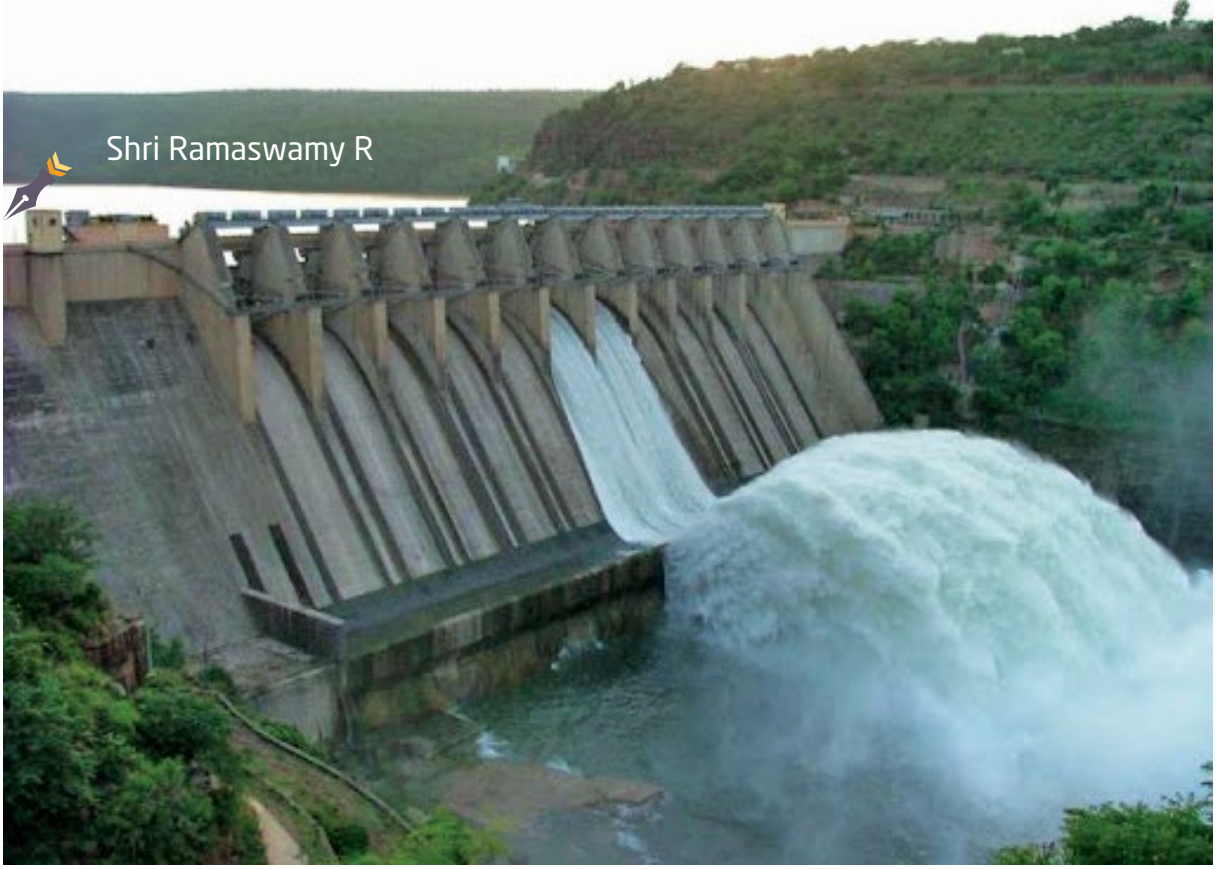
She stated that managing traffic, providing safety and security for city residents from street crimes like hooliganism, eve-teasing and drunken driving and enhancing the ease of doing business were among her priorities, besides focussing on basic policing.

Kum Silpa Nandakumar

Assam confers Highest Civilian Award on RATAN TATA

Tata Trusts Chairman, industrialist and philanthropist Ratan Tata has been honoured with the **Assam Baibhav**, the state's highest civilian award.

The Assam government had announced to confer the award in January, but due to health issues, Ratan Tata was unable to travel. Consequently, the award was presented to him in Mumbai on 24th February. "As an industrialist and philanthropist, he has made exceptional contribution towards furthering cancer care in Assam," said the Chief Minister Himanta Biswa Sarma. The award carries a citation, a medal and a cash amount of ₹5 lakh.



Shri Ramaswamy R

NATIONAL DAM SAFETY AUTHORITY

to prevent dam related disasters

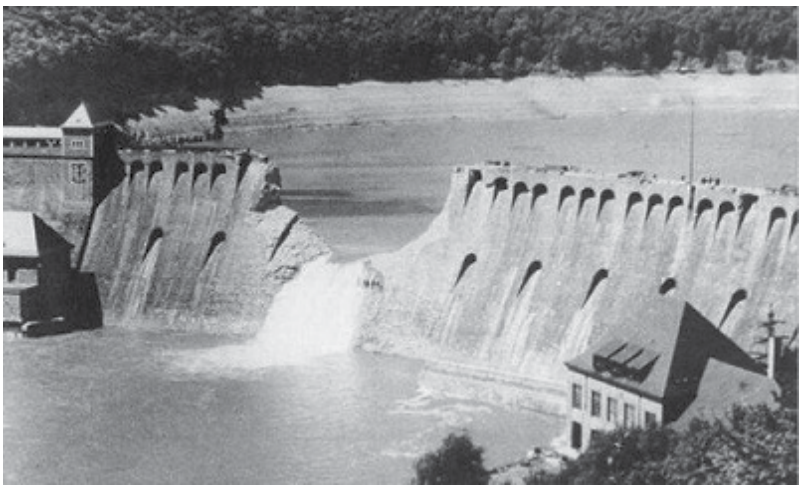
All States and Union Territories must adopt uniform dam safety procedures for surveillance, inspection, operation and maintenance.

On 18th February 2022, Government of India constituted National Dam Safety Authority, as a follow-up on the Dam Safety Act passed in Lok Sabha and Rajya Sabha in August 2019 and December 2021 respectively.

FEATURES

* All States and UTs must adopt uniform dam safety procedures for surveillance, inspection, operation and maintenance.
* Prevent dam failure and related disasters.
* Appoint National Committee on Dam Safety with CWC Head as chairperson with representatives from both State and Centre and independent experts.
* For forming State level dam safety organization.
* To gather data to study design, construction, repair and enlarging of dams, reservoirs and related structures.

In India, most of the dams are constructed and maintained by States. There were two dam related disasters in Independent India, one in Koyna and the other Machchhu II.



Our dams have also become indispensable for flood control, power generation, inland navigation, wildlife sanctuaries and their tourism.

Koyna Dam disaster

The dam was constructed in 1964 in seismically sensitive Deccan plateau, in Satara District, 140 kms from Pune.

Even though over 1, 19,000 instances of tremors were recorded and withstood by the dam between 1964 and 1967, a major earthquake, 6.6 on Richter occurred on 11th December 1967. Around 180 were dead and more than 2000 injured and considerable economic loss resulted.

Machchhu Dam II

The earthen dam basically was intended to cater to the drinking water needs of water deficient Saurashtra region. But because of rains, floods and excess storage for agriculture, the dam broke up on 11th Aug 1979. Within 20 minutes, the nearby Morbi town was flood-hit and was covered in 12 to 30 ft of water. Around 1800 were killed and huge economic loss was reported.

After both these calamities our scientists and engineers rose to the occasion, repaired, furthermore strengthened the structures and restored them to their original capacities.

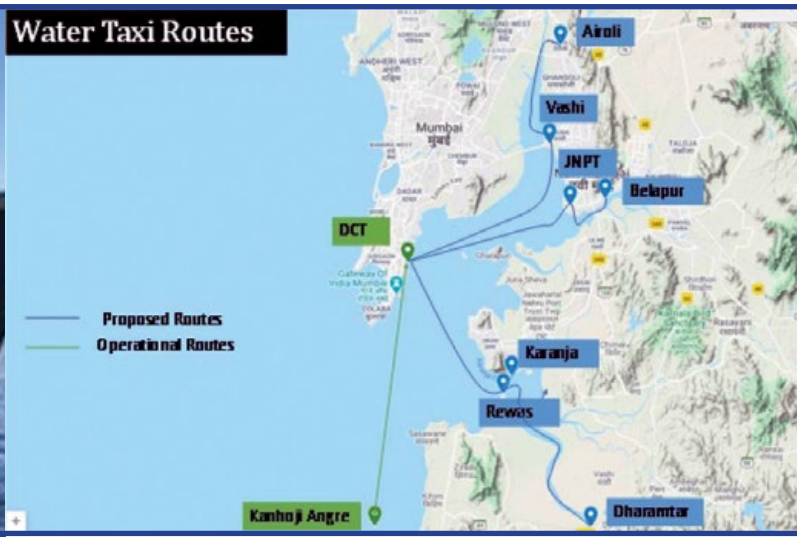
Challenges faced

1. Attending to structural deficiencies.
2. Operating and monitoring of dams.
3. Meeting current design standards.
4. Providing institutional and technical capacities for addressing safety.
5. Monitoring of ageing dams.
6. Providing finance for maintenance and repair.

All these challenges were successfully met by our scientists and technical experts. India is now able to provide safe dams and achieve excellent food production.

Our dams have also become indispensable for flood control, power generation, inland navigation, wildlife sanctuaries and their tourism.

Smt Shubha T R



Water Taxi Service

connecting Mumbai and Navi Mumbai

The country's first-of-its-kind full-fledged water transportation system was jointly inaugurated on 17th Feb 2022, by Union Ports, Shipping & Waterways Minister Sarbananda Sonowal and Maharashtra CM Uddhav Thackarey.

It links Mumbai coast (from the Domestic Cruise Terminal DCT) with the mainland at Navi Mumbai and other locations such as Nerul, Belapur, Elephanta Island and Jawaharlal Nehru Port. The Belapur Jetty project at Navi Mumbai has been constructed at a cost of ₹8.37 crore under the Sagarmala Programme.

Fares (one-way):

Speedboat - ₹800 to ₹1,200 for a 30–40-minute journey.

Catamaran - ₹290, ₹150 for pets, ₹100 for bikes, ₹400 for cars and ₹500 for SUVs. Monthly pass for speedboats - ₹12,100.

Currently 7 speedboats (capacity - 10 to 30 passengers each) and a catamaran boat (capacity - 56) shall be operated for over 300 days in a year between 8 am and 8 pm.

Besides being eco-friendly, the water taxi service of Maharashtra Maritime Board (MMB) provides comfort, pleasure of water journey, speedy and stress-free travel.

Shri Ramaswamy R

ASIA'S BIGGEST Bio-CNG Plant 'Gobar-Dhan' in Indore

Bio-CNG is a methane rich compressed fuel produced from biological waste.

The Plant has come up on a 15-acre land at Devguradiya through a Public-Private-Partnership (PPP). It is expected to produce 17-18 MT of Bio-CNG per day from 550 tons of organic household waste such as fruits, vegetable peels and leaves generated from Indore City. It runs on the principle "From waste to wealth".

Built by a Delhi based company at a cost of ₹150 crores, it will also provide solar power which will cover 20% of their requirements.

Bio-CNG is a methane rich compressed fuel produced from biological waste. It contains 92-98% methane and only 2-8% CO_2 compressed to 20-25 MPa. (megapascal)

AUTO FUELS – A COMPARISON

FUEL	UNIT	PRICE[1] (in Rupees)	MILEAGE[2] (in KMs)
BIO CNG[3]	Per KG	5.00	25-30
CNG	Per KG	57.51	25-30
LPG	Per KG	66.86	25-30
Petrol	Per Litre	95.41	15
Diesel	Per Litre	88.27	17

[1] Fuel prices at Delhi on 23rd March 2022

[2] Mileage for a 4 seater passenger car

[3] BIO CNG produced at Indore

Bio CNG is less polluting. The emissions have 5-10% less of CO_2 and almost nil Nitrogen oxides and soot, compared to diesel vehicles.

The fuel is very similar to CNG produced as petroleum by-product in terms of its fuel properties, economy, engine performance and emissions.

Bio-CNG is produced from anaerobic (without oxygen) decomposition of bio mass or waste. The gas will contain 55-60% methane, 40-45% CO_2 and traces of Hydrogen Sulphide (H_2S). Second stage involves purification to remove CO_2 and H_2S and compression to prepare Bio-CNG. Raw materials used can be bio-mass like crop residue, cattle dung, sugarcane press mud, municipal wet waste or effluent waste from sewage treatment plants.

Benefits

1. Once an open-air dumping ground for mountains of garbage and source of bad odour, diseases, air and water pollution, the project site gets converted into an eco-friendly production unit providing many job opportunities.
2. Municipal corporations can save 100s of crores on wet waste disposal.
3. 100 tonnes of organic manure will be generated from this Plant.
4. Cow dung bought from nearby villages provide necessary bacteria for garbage decomposition and bring income for villagers who rear cattle.
5. The biggest benefit is their usage as fuel for running city public transport buses. From the unit at Indore, Bio-CNG will be sold at ₹5 per kg, that will run 550 public transport buses.
6. Usage of Bio-CNG will bring big savings for Indore City public transport.
7. Reduction in pollution.

Bio CNG is less polluting. The emissions have 5-10% less of CO_2 and almost nil Nitrogen oxides and soot, compared to diesel vehicles.

This bio-fuel can mitigate lakhs of tons of CO_2 annually for the City Corporation. Carbon credits received can be sold in international markets and substantial income generated.

PM Modi while congratulating the MP Government on the Govardhan Project stated that the government is working on introducing Bio-CNG Plants in 75 more districts to benefit farmers. This will help make the cities clean and pollution free.

Kum Anu Narayan

CHANDRAYAAN–2

detects Solar Proton Events, spots Coronal Mass Ejection

Orbiter has detected solar proton events which significantly increase radiation exposure to humans in space.

ISRO has stated that a payload on-board the Chandrayaan-2 Orbiter has detected solar proton events which significantly increase radiation exposure to humans in space. The Large Area Soft X-Ray Spectrometer (CLASS) also recorded Coronal Mass Ejections (CMEs are a powerful stream of ionized material and magnetic fields, which lead to auroras across the polar sky and geomagnetic storms on Earth.)

Solar flares are eruptions that occur on the sun's surface, occasionally expelling energetic particles into interplanetary space. Such events are called Solar Proton Events or SPEs. These high energy protons impact space systems and can cause ionization of Earth's ionosphere.

Solar flares are classified according to their strength - the lowest being the A-class, followed by B, C, M and X. The recent flares were both M-class, with each letter representing a 10-fold increase in energy output. Within each class is a finer scale that ascends in strength from 1 to 9.

The SPE event was observed by NASA's Geostationary Operational Environmental Satellite (GOES) orbiting around Earth. However, GOES did not detect the CME event. "Chandrayaan-2 Orbiter detected SPE due to an M5.5 class solar flare that occurred on 20th January 2022," the ISRO said. "CLASS instruments also detected a CME event as it passed through the moon due to an M1.5 class solar flare that occurred on 18th January."

The CME travels with a speed of about 1000 km/s and it takes about 2-3 days to reach Earth. The planet's magnetic fields provide shielding from such events, which is why it was missed by the GOES satellite.

Shri Mrithyunjay GN

WIPING OFF THE GRIME:

legacy waste management in Rajasthan

Once properly processed and remediated, over 450 acres of valuable land across Rajasthan is expected to be freed.

The Ministry of Housing and Urban Affairs (MoHUA) approved proposals of ₹250 Crore to help with waste management in Rajasthan **as part of Swachh Bharat Mission-Urban 2.0**, which aims to make cities across India garbage-free, by processing waste in dumping grounds that have accumulated over the years.

Jaipur holds 11.9 lakh tonnes of waste across several dumping grounds resulting in lack of viable land and health hazards to people living nearby. With the grants, the state is expected to process and safely dispose this waste, and thereby free up 145 acres of land for urban development.

Other cities such as Jodhpur and Bikaner also have huge dumping grounds. Once properly processed and remediated, over 450 acres of valuable land across Rajasthan is expected to be freed.

While this is a solid step towards making the cities of Rajasthan garbage-free, more robust steps on a regular basis need to be taken to ensure proper segregation of the 4800 tonnes of waste generated every day. This will reduce the formation of new dumpsites and improve economic and urban development.

The goal of remediating 1303 lakh tonnes of legacy waste across India has made great strides and is expected to lead India to a cleaner future.

Smt Ramamani N

Arogya Vanam
at Rashtrapati Bhavan

DO YOU KNOW ?

- **Nearly 10,000 plants are used for medicinal purposes in India.**
- **Only 1200 to 1500 are part of the official ayurvedic pharmacopoeia in more than 3000 years.**

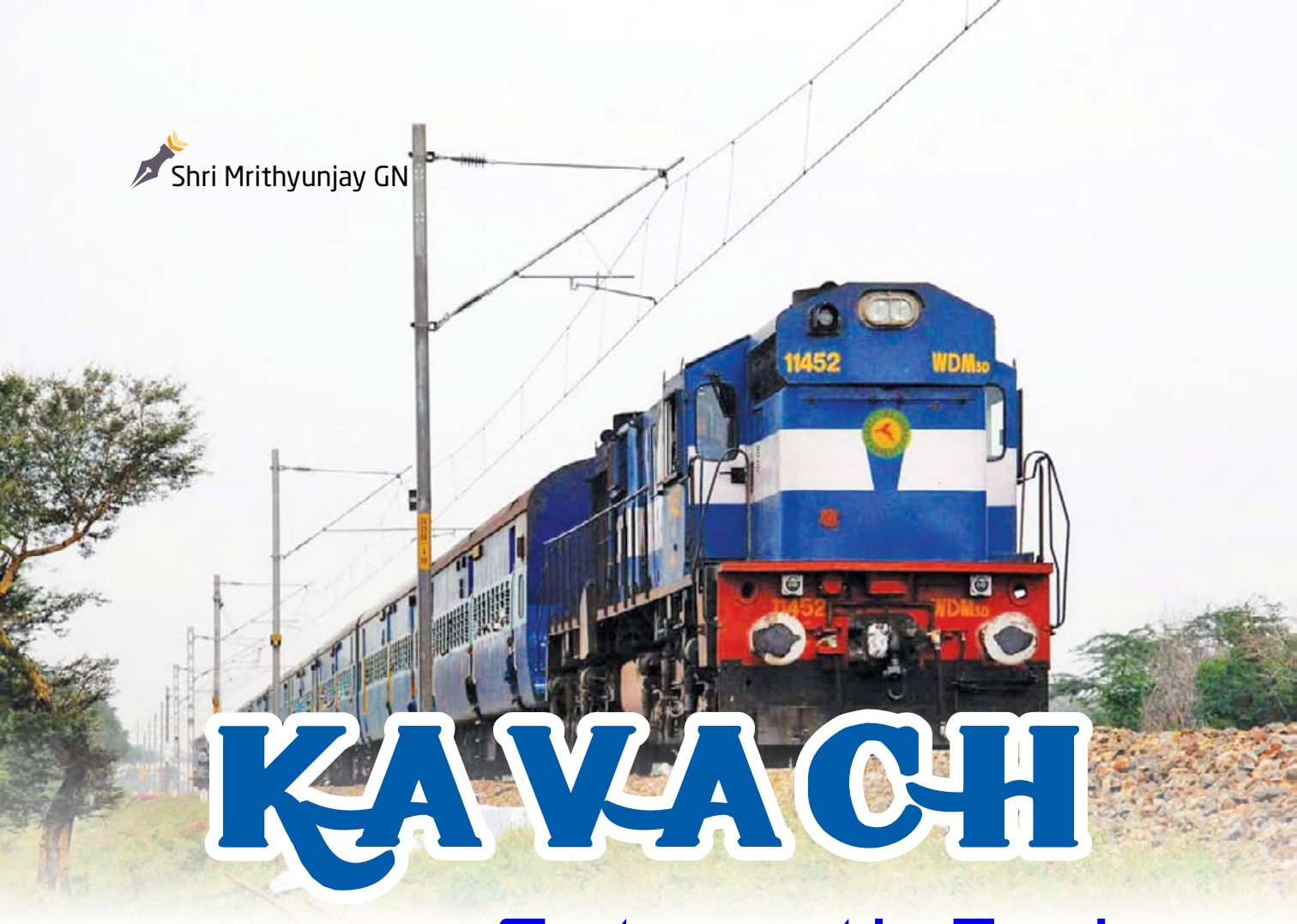
To promote the importance of Ayurvedic plants and their positive effects, ***'Arogya Vanam'*** has been developed at Rashtrapati Bhavan. President Ram Nath Kovind inaugurated it in the presence of PM Modi.

HIGHLIGHTS

In the shape of a human sitting in Yoga Mudra.

- 6.6 acres.
- Open for public viewing.
- Has 215 medicinal herbs and plants.
- Has water fountains, a yoga platform, water channels, lotus pond and a viewpoint.

Shri Mrithyunjay GN



KAVACH

India's new Automatic Train Protection System

Kavach, (armour in Sanskrit) was tested between the Gollaguda and Chittigidda Railway Stations in Telengana.

Indian Railways (IR) operates and oversees the fourth largest national railway system in the world. With more than 1.2 lakh kilometres of tracks and 2 crore passengers utilizing the service daily, safety is one of the biggest concerns.

Any small accident can result in catastrophic results, ranging from delays in transport of vital goods to loss of human life. With this in mind, IR is constantly focused on ways they can ensure safe functioning of the railway system.

Kavach, the latest development under Atmanirbhar Bharat (Self-reliant India) initiative, is an Automatic Train Protection (ATP) system being implemented over the course of 2022-23.

Kavach (armour in Sanskrit) was tested between the Gollaguda and Chittigidda Railway Stations in Telengana. As part of the testing process, two trains head towards each other on the same track to simulate a head-on collision situation. The Kavach system detected the possibility of a collision and activated the automatic braking mechanism.

Kavach can be exported to other countries as a reliable ATP system at one fourth the cost of other equivalent systems used across the world.

Two other features that Kavach has been tested for is automatic stopping at signals and speed control in specific areas. For example, if a train attempts to cross a red light, Kavach is expected to automatically apply the brakes. When a certain speed limit is set in an area, Kavach will automatically detect any locomotive going above the limit and slow it down.

How it works

Kavach works by the use of Radio Frequency Identification (RFID) devices that are installed across railway tracks and different locomotive engines. These tags are all synced with a central server which contains details of the trains currently being operated across a large area. The RFID devices are used to constantly monitor trains to ensure that they are travelling on the designated tracks and at a specified time.

When a train malfunctions or an operator makes an error, the RFID tag on the engine will communicate with tags placed on the track and with the central database, realise that the train is not operating or travelling the way it is supposed to and makes the relevant corrections to avoid accidents.

Advantages

By preventing collisions, it can also save lives and precious cargo. Kavach also makes it easier to operate trains in conditions with low visibility such as rain or fog. They are a reliable way of keeping track of trains to ensure that they reach their required destination at the expected time.

Made in India, it is much more sustainable and cheaper than European systems currently employed across most railway systems in the world. Since the RFID tags use Ultra High Frequency and 4G networks to work, they can be adapted to systems across India.

This also means that Kavach can be exported to other countries as a reliable ATP system at one fourth the cost of other equivalent systems used across the world, making India a significant player in the technology field.

The Future

The future of Kavach is promising. Having already been implemented in over 1098 kilometres and across 65 locomotives in the South-Central Railway system, it is expected to next be implemented across tracks joining Delhi, Mumbai and Howrah. Kavach is also constantly evolving; new features such as temporary speed restrictions and live monitoring are being tested and added to it.

With all these , Kavach is expected reduce costs, increase Indian manufacturing and research, and ensure safe transportation.

Kum Kavya R

SOLAR CAPACITY

New milestone reached in 2021

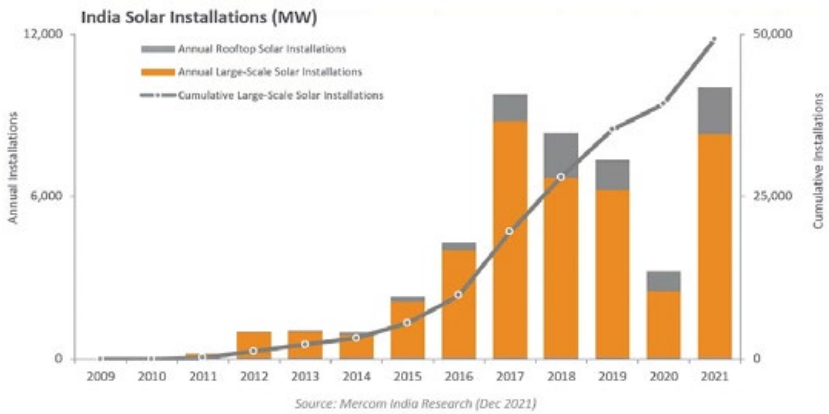
Rajasthan added the highest large-scale solar installations which amount to 4.5 GW.

India has achieved yet another milestone in the renewable energy sector by installing a record 10 Giga Watt (GW) of solar capacity in 2021. Based on the report released by Mercom India Research, large scale installations account for 83% of the 10 GW. The remaining 7% is from the rooftop solar panel installations.

The solar capacity of India has seen a 210% hike this year compared to the 3.2 GW installations in 2020. This spike is due to a significant number of projects being pushed from 2020 to 2021, as the country was focused on recovering from the pandemic. The cumulative solar capacity of all the installations made so far is 49.3 GW. India also has plans to install solar power plants with a collective capacity of over 53 GW.

Rajasthan added the highest large-scale solar installations which amount to 4.5 GW. The report also notes that India's installed renewable energy capacity was 150.9 GW, 38.4% of the overall power generation as of December 2021. Solar power accounts for 12.4% of the total installed power capacity in India and will increase in the upcoming years.

"The incredible energy transition story in India was clearly evident in 2021. Solar was the most installed new generation source making up almost a third of the new capacity, dwarfing coal and other fossil fuels," said Raj Prabhu, CEO of Mercom Capital Group.



Source: Mercom India Research (Dec 2021)

Kum Kavya R

INDIA'S LARGEST EV CHARGING STATION opens in Gurugram

These simple prototypes have proved that e-highway stations of NHEV will be world-class and draw a strong commercial roadmap of E-mobility on Indian highways.

India's largest electric vehicle (EV) charging station was opened in Sector 86, Gurugram, on 3rd March 2022. The four-wheeler charging station has a maximum capacity of 121 charging points. This EV charging station developed by Alektrify Private Limited has 75 AC, 25 DC and 21 hybrid charging points and can charge up to 1000 cars in a day.

Gurugram's first EV charging station opened earlier this year in January with 100 charging points in Sector 52. With the new station, Gurugram has two of the largest EV charging stations in India. Both were constructed as prototype stations and built within 30 days. Two more of the same scale will be built within the next 60 days in Noida, for the Delhi-Agra-E-Highway.

During the inaugural event, Abhijeet Sinha, Project Director of National Highway for Electric Vehicle (NHEV) said that 30 more E-Highway charging stations will be constructed in a record time of 90 days from the date of allotment to private companies.

"These charging stations are commercially and technically competing with petrol pumps now with 72 % utilisation. These simple prototypes have proved that e-highway stations of NHEV will be world-class and draw a strong commercial roadmap of E-mobility on Indian highways," he said.

India is working very hard to meet the 2015 Paris Agreement and the noted spike in electric vehicles will be furthered by this initiative. Let us strive together to create a green, clean India.

Smt Vaishnavi V

PUNE METRO RAIL PROJECT inaugurated

DO YOU KNOW ?

Anaerobic Bio digestion happens when micro-organisms break down organic matter in the absence of oxygen.

Root ball Technique is used to transplant trees securing the root ball (main root mass) of the tree.

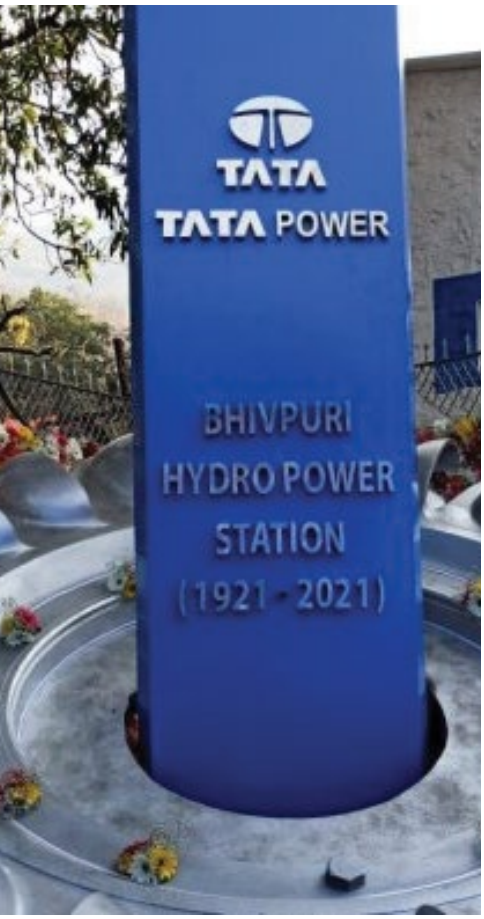
Another leap in the **Make in India** initiative is the Pune metro coaches with over 70 % indigenously built components. A 12 km section has become operational, initially.

Highlights

- The aluminium coaches are 6.5 % lighter than stainless-steel coaches.
- Coaches will have longer life with low maintenance.
- Solar power generation on the rooftop of the elevated stations; energy cost savings of ₹20 crores per annum and prevention of around 25,000 tonnes of CO_2 emissions.
- 'Ek Pune' card - contactless smart card which can be used for metro, buses, feeders, parking, utility and other retail payments.
- An MoU with DRDO for installation of anaerobic bio digester technology for 100% wastewater management which means zero discharge into the municipal sewerage system in all the stations.
- Pune Metro has transplanted 2,267 trees by innovative root ball technique.

Kum Anu Narayan

Tata Power's 75 MW Bhivpuri Hydro Power Plant completes 100 years



Tata Power's hydroelectric power plant in Bhivpuri, Maharashtra, which produces around 300 MUs of electricity annually, has just marked its centenary celebration.

Built in 1916 in Raigad, Maharashtra, the Bhivpuri Powerhouse's installed capacity was upgraded to 75 MW, including a 72 MW new powerhouse, with three units of 24 MW. The plant now transmits power over 110 kV transmission lines to the Mumbai metropolis.

The Bhivpuri, the Khopoli and Bhira are among the first hydroelectric plants that harness the Western Ghats' major water resources.

These make up Mumbai's 'islanding system' - the backup power source in case the main power supply gets impacted, like an inverter system installed inside households.

Shri Nagarajan R

India's first WOMEN OWNED INDUSTRIAL PARK

The industrial park established in association with the Telangana government is the first of it kind.

India's first 100 percent women-owned industrial park opened in Hyderabad, Telangana on 8th March 2022, commemorating the International Women's Day. It was inaugurated by Telangana Industries Minister KT Rama Rao.

Overview

- The FLO Industrial Park is named after the FICCI Ladies Organization (FLO), which is promoting it.
- Established in association with the Telangana government, this is the first-of-its-kind project.
- 25 women-owned and operated Green Projects.
- Covers 50 acres; cost ₹250 crore.
- The industries that have come up here manufacture touch screens, fans, packaging, steel and modular furniture, medical devices, organic and natural fabric apparel, food processing, signage, jewellery, recycled plastic artifacts, hydraulic elevators, pre-cast cement blocks, nutraceuticals and wellness and beauty products.

Will generate 1600+ jobs in the next 2 years of operation.

- Has amenities such as creches and play schools to provide a home-like atmosphere for women while keeping in mind the needs of working women entrepreneurs.
- The government has provided the roads, electricity, water, sewerage, sub-station, tool room, testing centre, exhibition centre, skill development centre, postal service, banks, etc.

In Phase II, the FLO wants to establish similar multi-industry women industrial parks across the country, as well as a centre of excellence for skill development.

- Will generate 1600+ jobs in the next 2 years of operation.

KT Rama Rao urged the entrepreneurs to think big, start to think about emerging technologies and focus on aerospace, defence, food processing, and forge global partnerships. He promised another 100 acres for the expansion of FLO women industrial park, subject to the park's focus on novel products. He also offered additional 10 % subsidy for women entrepreneurs.

A society that respects, empowers and honours its Nari Shakti, is truly bound to prosper.

Kum Priyadarsshini.S

RBI launches new UPI services for feature phone

UPI123Pay, a UPI for feature phones and a 24-hour helpline for digital payments, DigiSaathi were launched by RBI Governor Shaktikanta Das.

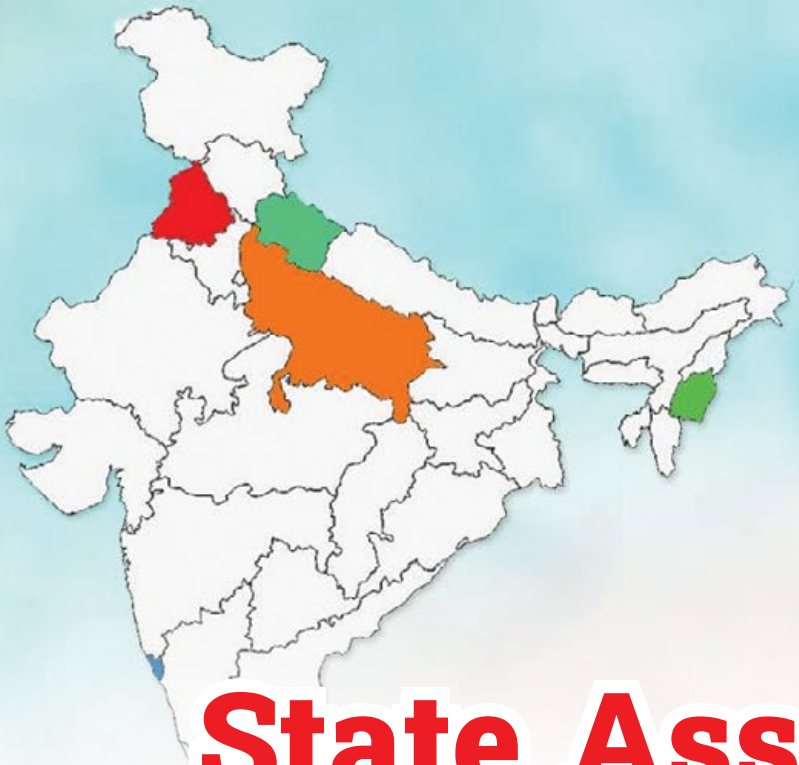
Individuals who cannot afford a smartphone can execute services on simple phones without an internet connection and can simply scan and pay.

Customers must link their bank account to access this facility. UPI (unified payments interface) '123PAY' is a three-step service for consumers.

Users of feature phones can now conduct a variety of transactions using four different technologies: an IVR (interactive voice response) number, feature phone app functionality, a missed call-based approach and proximity sound-based payments. Users may send money to friends and family, pay utility bills, recharge their vehicles' FAST Tags, pay mobile bills and check their account balances.

Customers will be able to link their bank accounts and create or alter their UPI PINs. There are an estimated 40 crore feature phone users in India.

For queries about digital payments and issues, users can go to www.digisaathi.info or contact 14431 and 1800 891 3333 from their phones.



State Assembly Elections 2022

What the results tell us

In an assembly of 403 seats the BJP won 273 seats and the Samajwadi Party (SP) won 125 seats.

The recently concluded elections to the assemblies of four states have thrown up interesting results. In four out of the five (viz) Uttar Pradesh, Uttarakhand, Manipur and Goa BJP has returned to power and in Punjab Aam Aadmi Party (AAP) has registered a resounding victory.

Uttar Pradesh

For the first time in 37 years a CM has returned to power. Yogi Adityanath the CM contested the assembly elections for the first time and won by a big margin.

In an assembly of 403 seats the BJP won 273 seats and the Samajwadi Party (SP) won 125 seats. While the BJP's seats tally reduced by 49, that of SP increased by 73. The vote share of BJP improved by 3.6%. This victory of the Modi-Yogi combine (MY alliance) is commendable on two counts. First is the bucking of the anti-incumbency factor and secondly it is not a mere victory against political rivals but against an overwhelming ecosystem.

Since Yogi became the CM there has been a pan-India campaign unleashed against him by the dominant left. No CM in India has ever been to put to such scrutiny.

The welfare schemes of BJP and the direct delivery mechanism were the major drivers for the BJP's victory. Muzafarnagar in western UP which was the hub of the farmer's agitation returned a BJP MLA.

Yogi's spectacular achievement has been on the law and order and security front.

Punjab

AAP has won a resounding mandate in Punjab decimating Akali Dal, Congress and BJP winning 92 seats in the 117-seat assembly. This is the highest for any party in the past four decades and a shot in the arm for Arvind Kejariwal who seems to be nurturing national ambitions.

The people have reposed faith in AAP rejecting the mainstream political parties like Shiromani Akali Dal and Congress. BJP was not a force to reckon with.

The people wanted an end to the mafia whether it is sand mining, transport, drug cartels or paid transfers. They were disgusted with the corruption and insensitivity of the SAD and the Congress. It is now up to the AAP to prove its mettle. If it succeeds in Punjab it can set its eyes on other states as well.

The people have reposed faith in AAP rejecting the mainstream political parties like Shiromani Akali Dal and Congress. BJP was not a force to reckon with.

Uttarakhand, Manipur and Goa

In Uttarakhand BJP returned to power. Pre-poll and post-poll predictions indicated that it will be a close contest between BJP and Congress. But BJP won decisively with 47 seats while Congress won 19. However, the CM Pushkar Singh Dhami was defeated.

In Manipur the exit polls had predicted the ruling BJP would either emerge as the single largest party or get a simple majority at best. BJP has won a decisive mandate by winning in 32 seats up by 11 BJP's vote share has also gone up by 4.5%. The seats tally of Congress has dropped from 28 to 5.

In Goa the party returned to power for the third consecutive time. This time it went to the polls without the charismatic Manohar Parikkar. Here again it was believed that the fight will be close with an advantage to Congress. However BJP won 20 seats (up by seven) while Congress was down by 8 seats.

On the whole it was a resounding win for the BJP in 4 states and for the AAP in Punjab.

Key Takeaways

- The electorate is wise enough to decide on its own without getting swayed by narratives.
- Security, law and order, development and governance are the priorities of the people.
- If there is a credible alternative people are ready to experiment and show the door to the mainstream parties.

The BJP has projected that the 2024 elections to the Parliament is a done deal. But the contours of the electoral arena seem to be too complicated to arrive at such a simplistic conclusion.

There is no denying the fact that this is a spectacular win for BJP. But all these states together account for only 99 seats in the national Parliament and that cannot be lost sight of. Nevertheless it appears Advantage BJP for now.

Shri Sampath

World Health Organization

Global Centre for Traditional Medicine

The Indian traditional medicines are economical in terms of pricing and will be available at a much affordable cost to the global audience.

In a landmark move that will have far reaching positive implications, the Indian Government and the World Health Organisation (WHO) have decided to set up Global Centre for Traditional Medicine (GCTM). It will be the first and the only centre catering to the needs of traditional medicine across the globe.

WHO Global Centre for Traditional Medicine which is set up under the auspices of Ministry of AYUSH, GOI, will help position traditional Indian medicines of yester years across the globe. It will help provide leadership on matters related to global health pertaining to traditional medicine and will help showcase the quality and safety and efficacy aspects, to name a few.

It is widely seen that the Indian traditional medicines are herbal based with little or no major side effects.

This will open the possibilities of foreigners intending to study medicine in India and absorb the benefits of age-old wisdom in medicine which has been passed on to us through generations.

The Indian traditional medicines are economical in terms of pricing and will be available at a much affordable cost to the global audience. India which holds a pride of place in the pharma world presently, will be able to add traditional medicines to its kitty and make it completely holistic.

India will become the gateway to the world of pharma of all hues and these will be made available to the citizens across the globe.

We will become the hub of cost-effective production of medical requirements. This will open the possibilities of foreigners intending to study medicine in India and absorb the benefits of age-old wisdom in medicine which has been passed on to us through generations.

Covid has proven to the universal audience that it is the duty of all governments to take utmost care of the health requirements of all its residents and citizens. India has achieved milestones in vaccinating millions of its citizens through indigenous production and ensuring its availability across the length and breadth of the country. Our self reliance has saved billions in terms of foreign exchange and ensured that mortality is low.

We have brought Yoga to the centre stage of the world by passing a resolution at the United Nations and ensuring that the benefits of the same are passed on to millions of people across the globe. Our traditional medicines through GCTM along with Yoga are poised to make it a holistic package for the benefit and betterment of all.

Smt Sarada Devi Ravutu

GIRL CADETS

to be inducted in

Rashtriya Indian Military College

The oldest military college of the country, Rashtriya Indian Military College (RIMC) Dehradun, Uttarakhand which celebrated its centennial founding day in March, will admit 5 girl students in the forthcoming academic session starting from July. 568 girls in total took the entrance exam for the five seats allotted.

The college was in Inaugurated in 1922 by the then Prince of Wales, Prince Edward VIII to educate and train Indian youth as part of the British Indian Army's 'Indianisation' programme. Originally the Prince of Wales' Royal Indian Military College, it was renamed after independence. It is a top training institute for those interested in joining the Indian Army.

Procedure

- Approximately 25 cadets are admitted every six months.
- Candidates should be above 11½ years of age or must not have attained the age of 13 on 01 (Jan) or 01 (July) of the term they join in.
- Admissions are made to Class VIII only.
- Candidates are selected on the basis of their performance in an All-India Entrance Examination held twice a year comprising a written examination.
- They should be medically fit in accordance with the medical standards prescribed.

Smt Sumathi Ramakrishnan

Flying Trainer HANSA-NG completes Sea-Level Trials

India's first indigenous flying trainer 'HANSA-NG' designed and developed by CSIR-National Aerospace Laboratories, has successfully completed the sea-level trials at Puducherry. The aircraft was covering a distance of 140 nautical miles in 1.5 hours at a cruising speed of 155 km/hr.

The objective was to evaluate handling qualities, climb/cruise performance, balked landing, structural performance including positive and negative-G, power plant and other systems performance at sea level.

HANSA-NG is one of the most advanced flying trainers powered by Rotax Digital Control Engine with unique features like Composite Lightweight Airframe, glass cockpit, bubble canopy with wide panoramic view, electrically operated flaps, etc., are designed to meet the Indian flying club needs and it is an ideal aircraft for Commercial Pilot Licensing (CPL) due to its low cost and low fuel consumption.

Negative g-force is experienced when you accelerate downwards faster than the rate of natural free fall. Example: riding on a roller coaster that accelerates downwards or an aircraft performing a loop.

Balked / Rejected Landing is a low energy go-around initiated from a very low height above the runway or potentially, even after touchdown has occurred.

Smt Vaishnavi V

Longest vessel with cargo on Brahmaputra

DO YOU KNOW ?

- **Ram Prasad Bismil -** a prominent freedom fighter; founder of Hindustan Republican Association (later known as HSRA).
- **Barge** is a flat-bottomed boat built mainly for river and canal transport of heavy goods.
- **Draft** - the distance between the waterline and the lowest point of the ship which is essential to ensure safe balance.
- **Dredging** is the act of removing silt and other material from the bottom of bodies of water.
- India has about 14,500 km of navigable waterways comprising rivers, canals, backwaters, creeks etc.
- About 55 million tonnes of cargo is being moved annually by Inland Water Transport (IWT), a fuel - efficient and environment - friendly mode.
- The Brahmaputra River has the second highest sediment yield per square km in the world next to Yellow River,China.

The Motor Vessel Ram Prasad Bismil has become the longest ever vessel to sail on the Brahmaputra river carrying goods equivalent to 150 trucks or three trains. This is considered a historic cargo movement as it carried such a huge capacity through waterway in a single time. The objective of the project is to renew the vitality of Brahmaputra as Northeast India's economic fortune.

Features

- It has three parts
  - A tugboat with 13,000 horsepower
- 2 barges named Kalpana Chawla and APJ Abdul Kalam.
- **Length :** 90 m; **Width :** 26 m.
- Cheapest and ecologically most adept mode of transportation.
- Allows the connect for the business of northeast through the marine network with the rest of the world.
- Reduces congestion on roads and railways.
- Pilot Run
  - **From:** Syama Prasad Mookerjee port in Kolkata
  - **To:** Pandu port in Assam

This run lays down the path for commencement of **barging operation** from Kolkata to Guwahati via Indo-Bangladesh Protocol Route (IBPR).

Challenge faced - The ship when loaded had a draft of 2.1 metres, which necessitated dredging in several patches of the water route. India and Bangladesh funded the dredging of this stretch with 80:20 ratio for seamless navigation.

Shri Mrithyunjay GN

A Partnership through the Ages

Prime Minister Naftali Bennet is expected to meet with PM Modi in celebration of 30 years of successful diplomatic relations between India and Israel. India and Israel have extensive economic, military and political ties of great importance to both the nations.

Historical Significance

While modern relations have been on for 30 years, historians have discovered that India and Israel also share immense cultural history. Israel and other Mediterranean countries may have shared extensive trade relations as far back as the 2nd century BCE. It is said that authors of the Old Testament of the Bible have written about India and its culture.

Jews have been among the first foreign people to arrive in India as per recorded history. When Jews suffered persecution across the world, India provided them safe haven.

Israel was also instrumental in supporting India during the Kargil War of 1999 by providing arms and ammunitions.

India has also been vocal in its disavowing of antisemitic beliefs during the second world war.

Much like India, Israel went through a very tumultuous period in history. In November 1947 the Partition of Palestine was considered because of the growing trouble between the Israeli Jews and the Palestinian Arabs.

UN drew up a partition plan. India was against the partition of Palestine, which eventually did not happen. However, civil wars broke out.

Following the political turmoil in 1947 and India's post-independence growth, relations between Israel and India remained dormant until 1992. Then upon mutual agreement between PM P.V Narasimha Rao and Israel PM Yitzhak Shamir, India opened its embassy in Tel Aviv in January 1992. Since then, Israel and India have shared strong military and diplomatic ties benefiting both nations.

Military and Trade support

India is the largest buyer of Israeli military equipment and Israel is India's largest supplier, second only to Russia. Both countries have engaged in extended military intelligence sharing and have undertaken joint training operations over the years. Israel was also instrumental in supporting India during the Kargil War of 1999 by providing arms and ammunitions.

Since then, India has purchased drones, missiles and aircraft from Israel. Israel and India have also cooperated on the international forum to form anti-terrorist task forces.

Since 1993 India and Israel have collaborated in the fields of Information Technology, Biotechnology and Lasers.

> **"Israel's drip irrigation method has been successfully implemented in water scarce areas and Bundelkhand farms of India."**

From 1999 to 2009, the volume of trade between India and Israel exceeded USD 900 crores, majorly in the areas of medical and electronic equipment, machinery and fertilisers. India is Israel's seventh largest export destination and in 2014, exports from India to Israel exceeded USD 200 crores.

Collaboration in Science and Agriculture

Since 1993 India and Israel have collaborated in the fields of Information Technology, Biotechnology and Lasers to great effect, funding multiple science ventures and setting up Research and Development facilities in both nations. In the field of space research, the Israel Space Agency has collaborated with ISRO to launch satellites such as TecSAR, a Radar Satellite into orbit aboard India's PSLV rocket.

Israel's drip irrigation method has been successfully implemented in water scarce areas and Bundelkhand farms of India to improve crop yield and increase longevity of crops. Plans to introduce crops native to the Mediterranean and Middle-east in India have been ongoing since 2008.

India and Israel hope to extend ties far into the future.

Smt Archana Sundar

Supercomputer PARAM GANGA installed at IIT Roorkee

PARAM Ganga - a High-Performance Computational (HPC) facility has been established by the Centre for Development of Advanced Computing (C-DAC) under the National Supercomputing Mission (NSM) at IIT Roorkee, with a supercomputing capacity of 1.66 Petaflops. Earlier, the Indian Institute of Science (IISc) Bengaluru installed the supercomputer 'Param Pravega'.

Building a Petascale Supercomputer with made-in-India components is to lead the path towards **Aatmanirbhar Bharat** and accelerate the problem-solving capacity in multidisciplinary domains simultaneously and to provide computational power to the user community of IIT Roorkee and neighbouring academic institutions.

Supercomputers are primarily designed to be used in enterprises and organizations that require massive computing power. For example: weather forecasting, scientific research, data mining, intelligence gathering and analysis etc.

PARAM Shivay, the first supercomputer assembled indigenously, was installed in IIT (BHU), followed by **PARAM Shakti, PARAM Brahma, PARAM Yukti, PARAM Sanganak** at IIT-Kharagpur, IISER, Pune, JNCASR, Bengaluru and IIT Kanpur respectively.

NSM was launched in 2015 to enhance the research capacities and capabilities in the country by connecting them to form a super computing grid, with National Knowledge Network (NKN) as the backbone.

The NKN project is aimed at establishing a strong and robust Indian network capable of providing secure and reliable connectivity. NSM plans to build and deploy 24 facilities with cumulative compute power of more than 64 Petaflops.

Till now C-DAC has deployed 11 systems at IISc, IITs, IISER Pune, JNCASR, NABI-Mohali and C-DAC under NSM Phase-1 and Phase-2 with a cumulative computing power of more than 20 Petaflops.

DO YOU KNOW ?

- **China has the maximum number of supercomputers, followed by US, Japan, France, Germany, Netherlands, Ireland and the UK.**
- **India's first supercomputer was PARAM 8000.**

Smt Ramamani N

Retro-Modification of T-90 BATTLE TANKS

DO YOU KNOW ?

Ballistics deals with the designing, launching, flight behaviour and impact effects of projectiles, especially ranged weapon munitions such as bullets, unguided bombs, rockets etc.

Laser Range Finder determines the distance from the device to a place or object. When taking a measurement, it emits hundreds of laser beams in about half-a-second to enhance measurement accuracy.

MWIR (mid-wave infrared) sensors are used by the military for detecting human activity. These infrared cameras detect thermal emissions of humans, vehicles and animals in contrast to their immediate environment.

Our motherland with rich values and culture has never attacked any country. However, our armed forces have proved time and again that we are no less than any other in defending ourselves. The Acquisition Wing of the Ministry of Defence signed a contract for ₹1,075 crores with Bharat Electronics Limited (BEL) for the retro-modification of Commander Sight of Battle Tanks-T-90. This will provide a further boost to the 'Make in India' initiative in defence manufacturing.

957 T-90 (Bheeshma) battle tanks will be retro-modified with new parts. The commander sight of T-90 is presently fitted with Image Converter (IC) tube-based sight for night viewing. Based on the requirement of the Army, DRDO and BEL have jointly designed and developed an advanced Mid Wave Thermal Image (MWIR) based sight as a replacement for the existing IC-based sight.

The new retro-modified Commander sight employs a thermal imager capable of detecting the targets at 8 kms during day and night and a Laser Ranger Finder (LRF) to find the ranges accurately up to 5 km, thereby enhancing its capability to engage targets at longer ranges. With the corrections from ballistic software and Laser Ranger Finder (LRF), the Commander of T-90 can detect, engage and neutralize the targets with phenomenal accuracy. The indigenously developed sight completed extensive evaluations under field conditions successfully.

Shri Subramanian S

Breakthrough in Crop Residue Management

Burning stubble destroys nutrients and worsens the soil even while killing and maiming people with air pollution.

The toxic haze that covered the country's capital came mostly from the northern states of Punjab and Haryana, where farmers burn an estimated 23 million metric tons of straw waste from rice harvests every year.

Earlier harvesting was done manually by workers who left very little stubble. But now harvester-combines (machine) do the harvesting and leave six to ten inches of stubble.

Burning this destroys nutrients and worsens the soil even while killing and maiming people with air pollution. But farmers say they have no economically viable alternative. Burning has been declared illegal, but farmers ignore the law and politicians dare not act against all farmers.

Every October and November farmers in Punjab and Haryana burn 12 million tonnes of stubble from their newly harvested rice crop. Farmers have a gap of just a few weeks between harvesting of rice and sowing of winter wheat, so they burn the stubble to clear their fields.

Researchers at the Indian Agricultural Research Institute (IARI), also known as the Pusa Institute, discovered the solution to this thorny issue—a sprayable biological decomposer that not only consumes the straw waste but also preserves the area's declining soil health.

Now, a joint development of the bio-decomposer by the IARI and UPL (India's largest pesticide company) has overcome the obstacles.

In 2021, spraying is estimated to have reduced emissions of carbon dioxide by 1.04 million tonnes, ash by 141,612 tonnes, carbon monoxide by 42,697 tonnes, particulate matter by 2,135 tonnes and sulphur dioxide by 1,423 tonnes.

UPL has developed a process to mass-produce the decomposer in powder form that can be transported to warehouses across target areas, ready for mixing with water and spraying when the window of time appears. UPL has also designed machines for spraying the decomposer.

Each machine has two hollow arms ten feet long with spraying nozzles every foot, adding up to 20 nozzles. A worker manually spraying the solution can cover only a few acres per day. But each machine covers hundreds of acres per day. Around 700 machines were deployed in the 2021 season, and 3,000 will be deployed in the coming season.

Dhruv Sawhney, Business Head and COO of nurture farm (a subsidiary of UPL Group) a digital platform for sustainable agriculture, has published the results of the Crop Residue Management (CRM) programme: the largest ever project to eliminate stubble burning in India.

The new organic spray has helped prevent farmers from burning over 385,000 acres of rice paddies. The low-cost bio-enzyme, called **Pusa decomposer,** breaks down straw and turns it into fertilizer.

The bio-enzyme breaks down crop residue in about three weeks on an average and increases organic carbon in the soil. On some farms, crops disintegrated even faster, within about a week, an encouraging sign as more farmers use the decomposer.

Around 700 machines were deployed in the 2021 season, and 3,000 will be deployed in the coming season.

This can lead to 92% overall stubble burn avoidance across the enrolled farms, with over 385,000 acres of the land saved from being burnt, resulting in the prevention of 1,038,965 tonnes of carbon-dioxide emissions from being released.

It's a win-win situation for farmers.

In 2021, spraying is estimated to have reduced emissions of carbon dioxide by 1.04 million tonnes, ash by 141,612 tonnes, carbon monoxide by 42,697 tonnes, particulate matter by 2,135 tonnes and sulphur dioxide by 1,423 tonnes.

A great breakthrough indeed!!

Kum Deepasri

CRIME

Elements and Stages

Criminal law functions to define crimes and punishments, to try persons accused of committing crimes and accord them suitable punishments.

The word 'crime' does not have a single universal definition, but it can broadly be understood to be an action or omission which constitutes an offence and is punishable by law.

Criminal law functions to define crimes and punishments, to try persons accused of committing crimes and accord them suitable punishments. Apart from specific offences and punishments, we need to know the elements and stages which constitute a crime.

Elements of a crime

Human Being - The first element requires that the wrongful act must be committed by a human being.

***Mens Rea* -** The second element of a crime is *mens rea* or evil intent or guilty mind without which there can be no crime. Generally, every crime requires a mental element (barring a few exceptions) and that is considered as the fundamental principle of criminal liability.

***Actus Reus* -** The third element of a crime is *actus reus* (a guilty act or omission). Some overt act or illegal omission must take place following the guilty intention.

Injury - The fourth requirement is injury to another person or to the society at large.

Stages of a crime

1) Intention: Intention is wanting to commit an act based on a motive. However, **mere intention to commit an offence not followed by any act, cannot constitute an offence,** the obvious reason being that it is very difficult to prove the guilty mind of a person.

Generally, every crime requires a mental element (barring a few exceptions) and that is considered as the fundamental principle of criminal liability.

Case Law

State of Maharashtra v. Mayer Hans George

Facts: The respondent was charged for bringing gold to India without the permission of the Reserve Bank of India as per the Foreign Exchange Regulations Act, 1947 and was sentenced for a year as he was considered doing so with an intent to defraud the government. The High Court acquitted him, but the state made a further appeal before the Supreme Court.

Issue: Whether *mens rea* is an essential ingredient regarding an offence under this provision.

Decision: The Supreme Court held that ignorance of the law cannot be an excuse for committing an offence. Since this offence was seen to be a grave social wrong, the person was deemed guilty.

2) Preparation: Preparation refers to arranging the necessary measures for committing the intended criminal act. **Again, mere intention followed by a preparation is not a crime**, except in certain situations such as preparation to wage war against the government.

3) Attempt: Attempt is the **direct movement towards committing a crime after the preparation is made.** There are three essentials of an attempt:

- Guilty intention to commit an offence
- Some act done towards the commission of the offence
- **The act must fall short of the completed offence.**

4) Accomplishment: If the accused succeeds in the attempt to commit the crime, s/he will be guilty of the complete offence and if the attempt is unsuccessful, s/he will be guilty of an attempt only. For example, A fires at B with the intention to kill him. If B dies, A will be guilty for committing the offence of murder and if B is only injured, it will be a case of attempt to murder.

Smt Krupa Murugesan

प्राकृतिकजीवनम् | Living Naturally

The right combination strikes a flame!

Jatharagni is the name given in Ayurveda for the digestive fire in the body that is responsible for metabolising food. It is present in the stomach and duodenum.

This bioenergy flame is responsible for holding the food for a certain duration inside the stomach to facilitate digestion. Jatharagni is important because it is the pathway where the food enters the body for metabolism and the products derived from the digestion should become proper nutrients for use by the body. When Jatharagni is not lit properly it will result in digestion problems and diseases.

How to light Jatharagni properly

By following healthy eating practices (refer the previous issue of Prajya). Another very important factor is the right food combinations. Let us see some of the food combinations which should be avoided first because, it is far worse to eat harmful combinations.

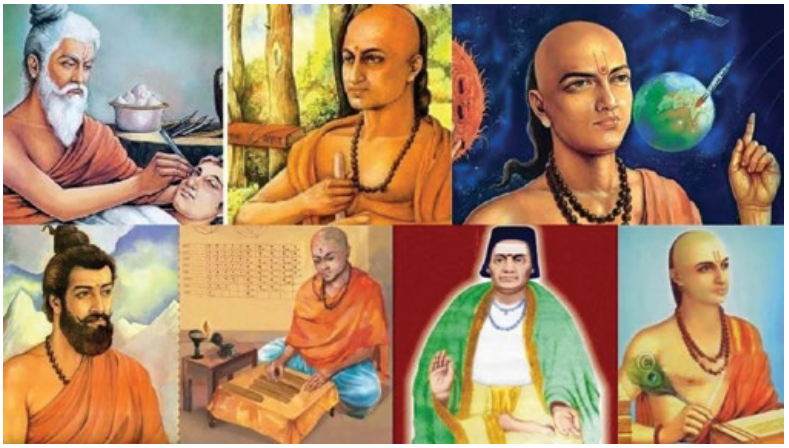
Never combine the following:

- **Milk and banana.** Though it is a usual practice, it is harmful according to proper eating practices of ayurveda.

- Never combine any sour product with milk, for e.g., **lemon juice with milk**.
- Don't eat onions or **radish with milk**.
- Don't eat **milk and curd** together.
- Don't add **jaggery or palm sugar** while boiling the milk. Sugar should be added only after boiled milk is cooled down.
- Never eat cold desserts such as **ice cream after a meal**.
- Never add **honey and ghee** to milk.

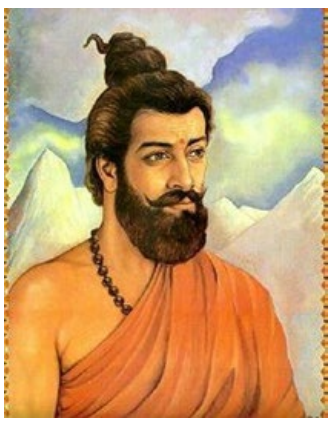
Fruits, especially citrus-based ones give maximum benefits when had independently, without combining with any meal. Healthy eating and maintaining a good gut health are important for balanced physical, mental and spiritual well-being.

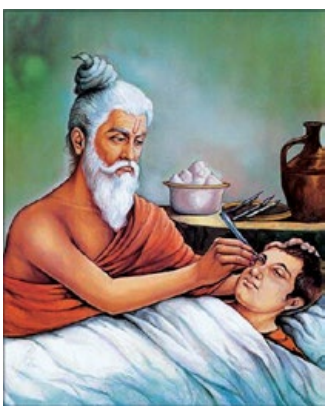
Kum Silpa Nandakumar



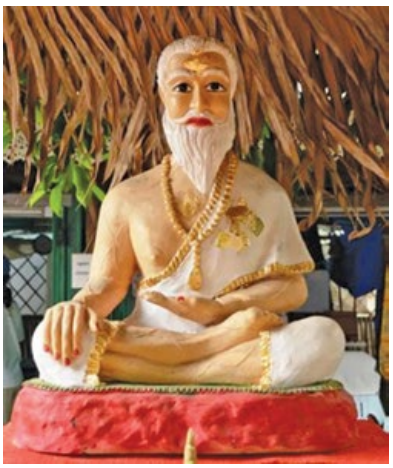
India was one of the most scientifically advanced countries in the ancient world. Indian sages had immense knowledge and made many unprecedented discoveries that continue to inspire thinkers and scientists today.

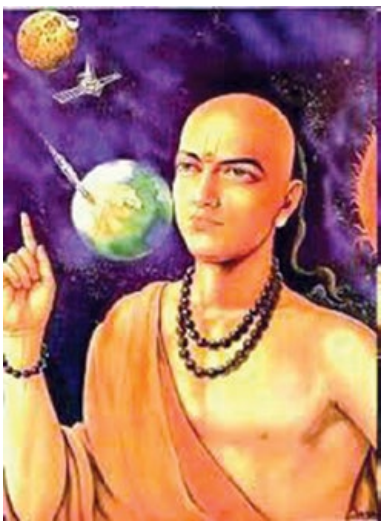
WHO AM I?

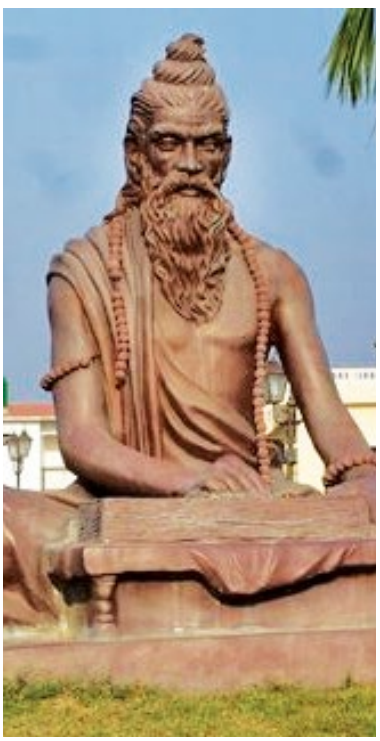




1. I'm celebrated as the **founder of Sankhya philosophy**. My work is based on the nature and principles of the ultimate soul (Purusha), primal matter (Prakruti) and creation. Owing to my observations and revelations on the secrets of creation, I am often recognised as the **Father of Cosmology.**
2. The Science of Yoga is popular around the world today because of its scientific approach and benefits. Hailing from Gonda (Ganara) in Uttar Pradesh, I have devised 84 yogic postures to effectively enhance the efficiency of the respiratory, circulatory, nervous, digestive and many other organs of the body. I'm known as the **Father of Yoga.**
3. People know me for the document in which I have prescribed treatment for twelve types of fractures and six types of dislocations. I've also written about using 125 types of surgical instruments including scalpels, lancets, needles designed from the jaws of animals and birds and elaborated on 300 types of operations. People call me the **Father of Plastic Surgery.**
4. I'm hailed as the **Father of Medicine**. I believe in the correlation of spirituality and physical health for diagnostic and curative sciences. My principles, diagnoses, and cures retain their potency and truth even in this modern age.
5. I formulated the process of calculating the motion of planets and the time of eclipses. I was the first to proclaim that the earth is round, it rotates on







its axis, orbits the sun and is suspended in space. But you may know me better for **my contribution of the concept of zero**.

6. **My works *Lilavati*** and ***Bijaganita*** are still **widely read by Mathematics students and teachers alike**. My treatise ***Siddhant Shiromani*** is about planetary positions, eclipses, cosmography, mathematical techniques and astronomical equipment. In ***Surya Siddhanta*,** I talked about the force of gravity, 500 years before Isaac Newton.
7. I dedicated twelve years for research and **produced maiden discoveries and inventions in chemistry and metallurgy.** I was appointed as the Chancellor of the famous University of Nalanda. My works include ***Ras Ratnakar, Rashrudaya and Rasendramangal.***
8. I am the founder of ***Vaisheshik Darshan*-** one of six principal philosophies of India. I classified all the objects of creation into nine elements, namely: earth, water, light, wind, ether, time, space, mind and soul, and I'm called the **Founder of Atomic Theory.**

SUDOKU

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9			5		3	8	6	

Answers on page 60

Smt Archana Sundar

National Award
in recognition of
exceptional work for
Women
Empowerment

nari shakti puraskar

Compassion Ability Courage

" India is moving from women development to women-led development."

The Nari Shakti Puraskar is a Union Women and Child Development Ministry initiative to acknowledge exceptional contribution of individuals and institutions, and to celebrate women as game-changers and catalysts of positive change.

29 women were awarded by the President in New Delhi. The highest civilian award for women is given annually on Women's Day. Instituted in 1999 as **Stree Shakti Puraskar**, it was renamed in 2015.

Institutional categories

1. Rani Lakshmi Bai Award
2. Rani Gaidinliu Zeliang Award
3. Mata Jijabai Award
4. Kannagi Devi Award
5. Devi Ahilya Bai Holkar Award
6. Rani Rudramma Devi Award

Individual categories

1. For courage and bravery.
2. For making outstanding contributions to women's endeavour, community work or making a difference or women's empowerment.

SATHUPATI PRASANNA SREE
Andhra Pradesh Linguist – preserving minority tribal languages

TAGE RITA TAKHE
Arunachal Pradesh - Entrepreneur

MADHULIKA RAMTEKE
Chhattisgarh - Social Worker

NIRANJANABEN MUKULBHAI KALARTHI
Gujarat - Author & Educationist

POOJA SHARMA
Haryana - Farmer & Entrepreneur

ANSHUL MALHOTRA
Himachal Pradesh - Weaver

SHOBHA GASTI
Karnataka - Social Activist
Working for ending Devadasi system

RADHIKA MENON
Kerala - Captain Merchant Navy – First woman to receive award for Exceptional Bravery at Sea from IMO

KAMAL KUMBHAR
Maharashtra - Social Entrepreneur

SRUTI MOHAPATRA
Odisha - Disability Rights Activist

BATOOL BEGAM
Rajasthan - Maand & Bhajan Folk Singer

THARA RANGASWAMY
Tamil Nadu - Psychiatrist & Researcher

NEERJA MADHAV
Uttar Pradesh - Hindi Author – working for rights for transgenders and Tibetan refugees

NEENA GUPTA
Tamil Nadu - Mathematician

ANSWERS of page 54 & 55

1. Acharya Kapil
2. Acharya Patanjali
3. Acharya Sushruta
4. Acharya Charaka
5. Aryabhatta
6. Bhaskaracharya
7. Nagarjuna
8. Acharya Kanad

7	2	9	6	3	4	1	8	5
6	1	8	2	9	5	7	3	4
5	3	4	1	8	7	2	9	6
1	6	3	4	5	2	9	7	8
4	5	2	9	7	8	6	1	3
8	9	7	3	6	1	5	4	2
3	7	5	8	1	6	4	2	9
2	8	6	7	4	9	3	5	1
9	4	1	5	2	3	8	6	7

Smt Archana Sundar

KASHMIRI Tribal Youth cracks NEET

Success is no accident.
It is hard work, perseverance, learning, studying, sacrifice and most of all, love of what you are doing or learning to do.

Defying all odds in his way, Srinagar's Tufail Ahmad has become the first tribal from the Mulnar Harwan area in J&K to crack the National Eligibility Entrance Test (NEET) 2022 and made his community and family proud.

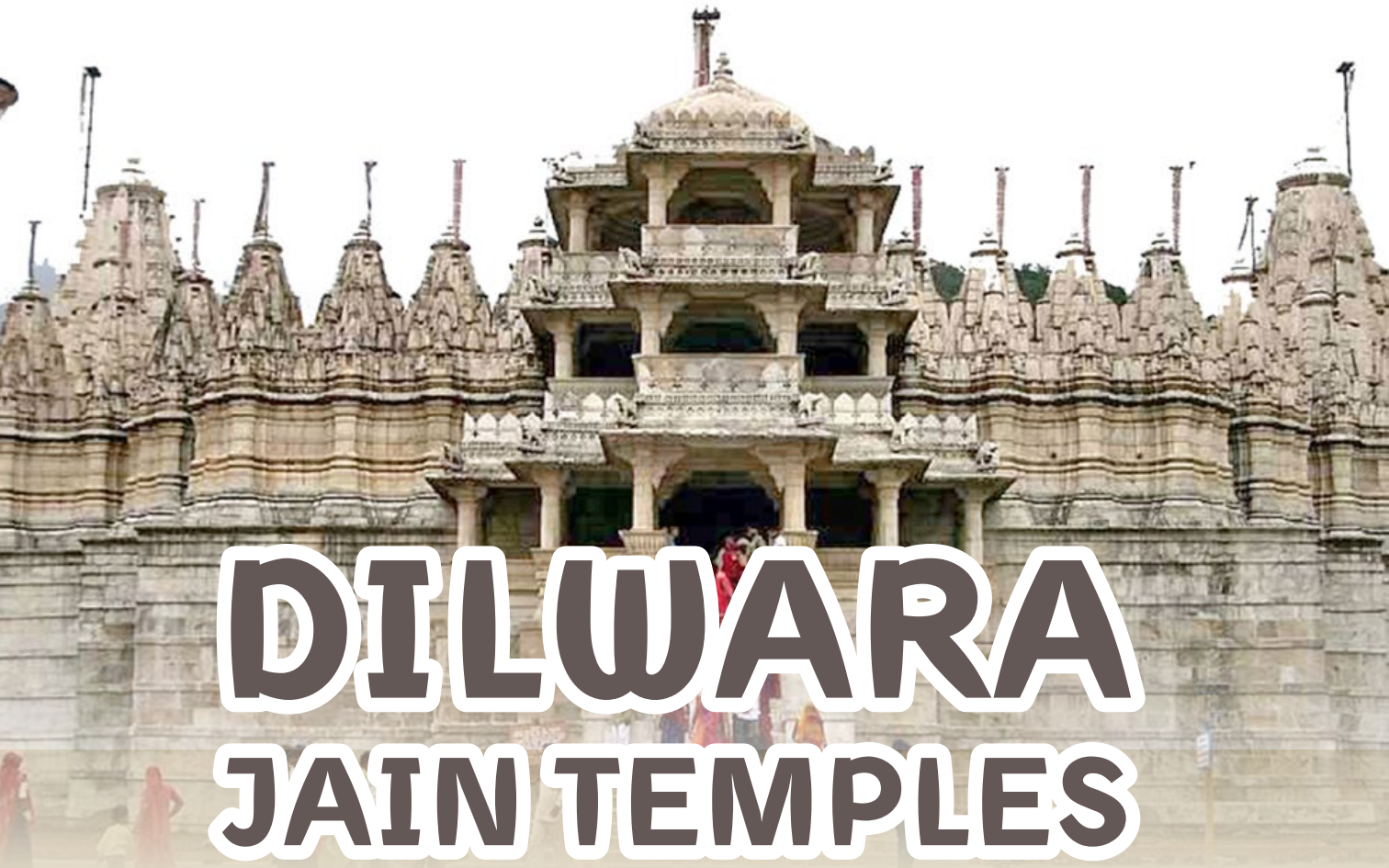
He received his primary education from Mission School New Theed Harwan Srinagar until class 8, after which he moved to Government Higher Secondary School in Shalimar to complete his class 12.

Despite the lack of coaching facilities, he prepared for NEET by watching YouTube videos on his mobile phone but even that was not easily available because of the poor connectivity and electricity in his area.

Tufail wants to help the people of his village, who often have to travel many kilometres to get medical care. Encouraging the youth to take an active part in the study of medicine has also been part of the government and the Indian Army's plan to bring the Valley back to normal.

Indian Army started the **Army HPCL Kashmir Super 50** initiative to provide free coaching to the students of North Kashmir region, to prepare for the medical examination. Consequently 50 meritorious students have been selected on the basis of written examination.

This was launched in 2018 with 30 students out of which 25 managed to qualify for NEET. Later the number was increased to 50 to ensure greater participation of girls. Presently 30 boys and 20 girls from north Kashmir are part of this training programme for medical aspirants.



DILWARA JAIN TEMPLES

The Dilwara Jain Temples are a well-known pilgrimage destination for Jains from all over India. They are surrounded by lush green hills and mango trees. According to historical records, these temples were built between the 11th and the 13th century CE.

Architectural Beauty And A Photographer's Delight

Though the temples appear ordinary from the outside, it is only when one enters them that one gets a real feel of the marvellous artistry.

The rich marble stone carvings and precise engravings on the temple ceilings and pillars are a photographer's delight.

DO YOU KNOW ?

- **All the prayers in the temple are still recited in Aradhamagadhi language which was spoken in Magadha region where Mahavira lived.**
- **It took 14 years to construct the temple with 1,500 masons and 1,200 labourers.**
- **The artisans of Dilwara temples were paid their wages in gold and silver. It is believed that the they were paid according to the amount of dust they collected, encouraging them to carve more intricately.**

The ceilings have ornate gold leaf work, and one may need to use binoculars to appreciate the finer details of the paintings. The paintings depict Jain history and mythological stories.

The intricately carved ceilings, entryways, pillars and panels highlight the aesthetic appeal of this temple. While there are other Jain temples in Rajasthan, the architectural excellence of the Dilwara temples is unrivalled.

The five temples have their own unique identity and are named after the villages they are located in. They are all dedicated to important Tirthankaras (saints).

- **Vimal Vasahi** : 1st Jain, Adinath.
- **Luna Vasahi** : 22nd Jain Tirthankara, Neminatha.
- **Pithalhar** : 1st Jain Tirthankar, Rishabha.
- **Parshvanath** : 23rd Jain Tirthankara, Parshva.
- **Mahavir Swami** : 24th and the last Jain Tirthankara, Mahavira.

Location and connectivity

Mt. Abu is 185 km from Udaipur by road. The nearest airport is Udaipur well connected to other places. Abu Road is the closest railway station for Mt Abu. Direct trains run from Abu Road to Ajmer, Jodhpur and Agra. The station is on the meter-gauge line between Delhi and Ahmedabad.

Shri Mrithyunjay GN

Chandra Shekhar Azad

The history of India's freedom struggle is as diverse as the martyrs that fought for it. While some of the more prominent figures chose to answer the violence enacted by British oppressors with the Gandhian principles of non-violence, others believed that the quest for independence will not be successful if India does not show the British that we would not take their blows and turn the other cheek.

One such figure that has been enshrined in the annals of Indian history for his immense bravery and tireless efforts is Chandra Shekar Azad. Born Chandra Shekar, on 23rd July 1906, he was bestowed the name Azad by the people of Kashi, Varanasi.

A fifteen-year-old Chandra Shekhar studying Sanskrit at a patashala at Kashi, was arrested and tried before a British magistrate

One of India's fiercest freedom fighters, Azad, through his conviction and patriotism, inspired countless more to join the freedom struggle.

for participating in Gandhi's Non-cooperation movement, in 1920.

When the magistrate asked his name, he proclaimed 'Azad'. When asked for his father's name he said 'Freedom' and finally when asked for his address he said 'prison'. Angered by his statements the magistrate ordered fifteen lashes to be inflicted on Chandra Shekhar's body. After every lash he cried ***"Bande Mataram."***

This brave act of defiance earned him the moniker Azad.

Having faced intense cruelty at the hands of the British and seeing the failure of the non-cooperation movement, Azad came to believe that non-violence was not a viable way for India to attain her freedom. He set about on a course of disrupting the British government through dacoity and violence.

In 1924 he joined the Hindustan Socialist Republican Army, headed by Bhagat Singh in Punjab. The association planned to fund their activities by looting British treasuries and liberating the wealth stolen from the Indians. Their most influential exploit happened on the night of 9th August 1925.

Ten young men stopped a train travelling from Kakori to Lucknow, fired shots to scare off the guards and took the guns and a large amount of money from the iron safe. Of these, one of the leaders was Chandra Shekhar Azad. This act against the government resulted in a vigorous manhunt for those involved. Three of the leaders, Ramprasad, Roshan Singh and Ashfaqulla were hanged and twelve others were imprisoned. Azad was the only one who escaped by disguising himself.

Over the next 5 to 6 years, Azad continued his incessant opposition of British leaders. In 1931, Nehru met with Azad who was still on the run from British authorities for his various exploits. While they disagreed about the methods they adopted in the fight for independence, Nehru was impressed by Azad's conviction.

"When the magistrate asked his name, he proclaimed 'Azad'. When asked for his father's name he said 'Freedom' and finally when asked for his address he said 'prison'. "

27th February 1931 was a dark day in India's history. Cornered in Alfred Park at Allahabad, Azad fought to his last breath, wounding two British police officials before he was shot dead.

One of India's fiercest freedom fighters, Azad, through his conviction and patriotism,inspired countless more to join the freedom struggle.

Smt Sandhya Nair

RED-EYE BUSH BROWN BUTTERFLY

Their wings are covered with thousands of tiny scales overlapping in rows.

Butterflies are the adult flying stage of certain insects belonging to an order or group called Lepidoptera. Moths also belong to this group. The word Lepidoptera means scaly wings in Greek. Their wings are covered with thousands of tiny scales overlapping in rows. The scales, which are arranged in colourful designs unique to each species, are what gives the butterfly its beauty.

Heteropsis adolphei, the red-eye bushbrown, is a species of satyrine butterfly species found in southern India. The species is named after Adolphe Delessert who collected the first specimens based on which the species was described.

A rare butterfly, CHEN-KANNAN TAVITAN (Red –Eye Bushbrown) has been spotted at Paithalmala in Kannur district in Kerala. This butterfly is endemic to the western Ghats. This butterfly is commonly found over 1,200 meters above sea- level. They were previously reported in some parts of Wayanad. Mostly found in areas north of the Palakkad Pass, Red – Eye Bushbrown is evolutionarily relevant. The life cycle of this butterfly, which lays eggs in grass, has not yet been scientifically described.

Kingdom	:	**Animalia**
Phylum	:	**Arthropoda**
Class	:	**Insecta**
Order	:	**Lepidoptera**
Family	:	**Nymphalidae**
Genus	:	**Heteropsis**
Species	:	**H. adolphei**

Chief Conservator of Forests said that the species was spotted by a team of observers. The discovery of the species underscored the ecological significance of Paithalmala, a major tourist destination.

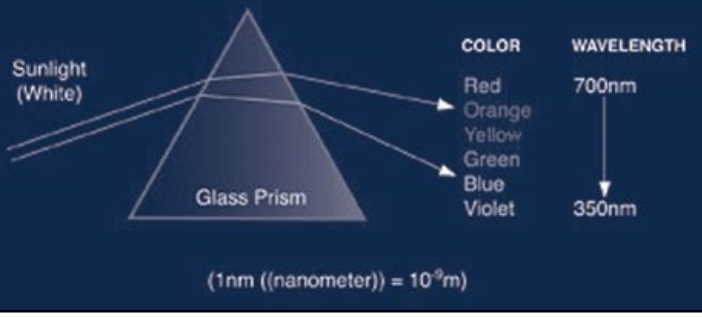
Endemic : (a plant or animal) native and restricted to a certain place.

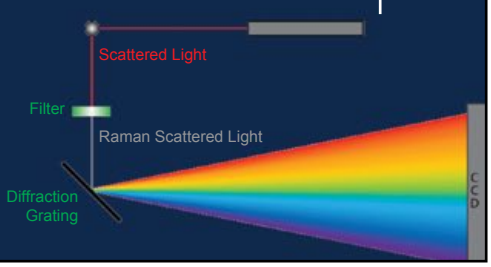
NATIONAL SCIENCE DAY

Commemorated in the honour of Sir CV Raman for his legacy who discovered Raman Effect on 28th Feb 1928

The essence of science is independent thinking, hard work, and not equipment. When I got my Nobel Prize, I had spent hardly 200 rupees on my equipment

- C. V. Raman





21 February

International MOTHER LANGUAGE DAY

True Spiritual Knowledge Is the Ultimate Language of Unity

The theme of the 2022 International Mother Language Day is **"Using Technology for Multilingual Learning: Challenges and Opportunities"**, said UNESCO.

India has 22 Separate Official Languages!

Home to a total of 121 Languages and 270 Mother Tongues !!