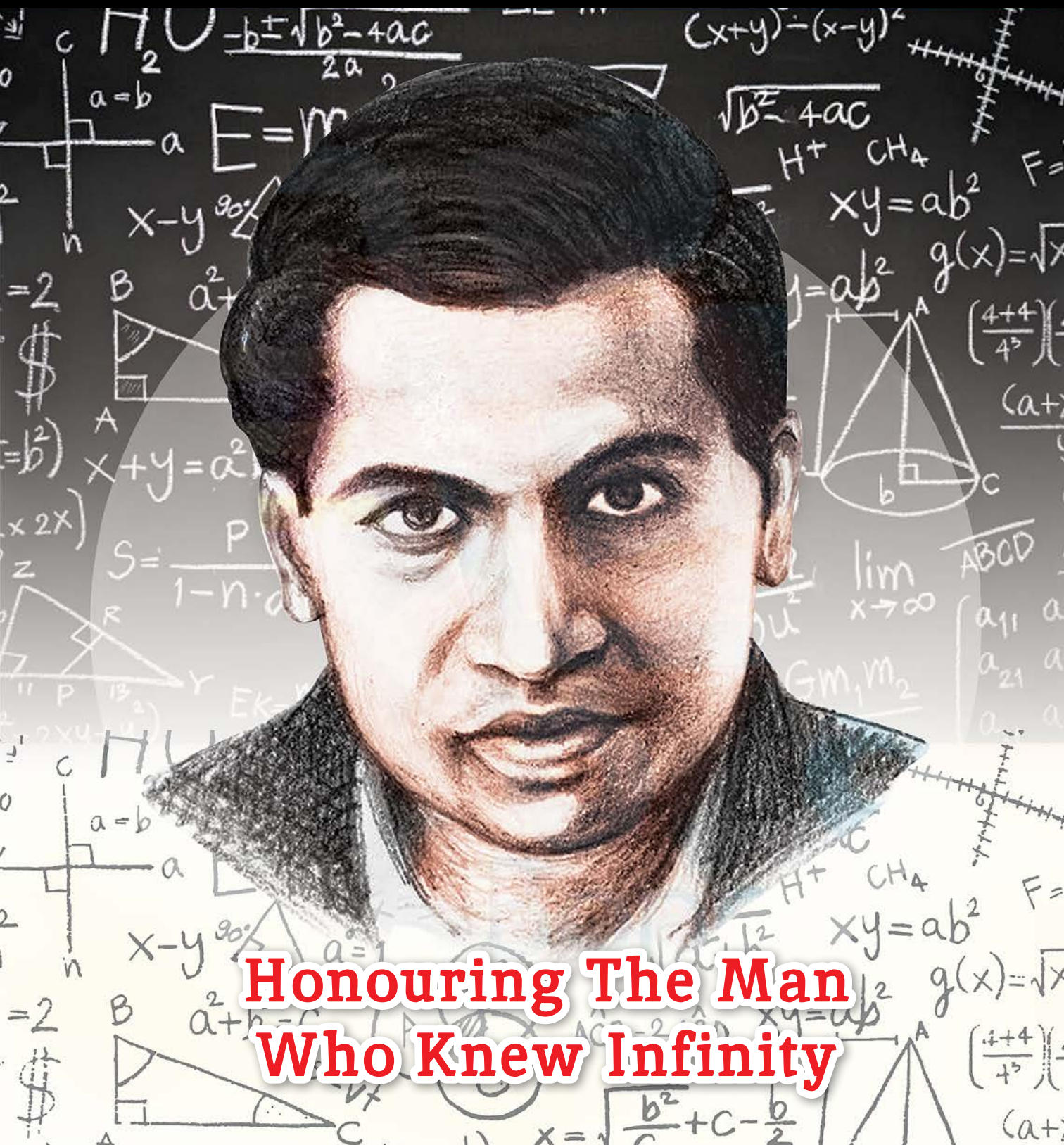


PRAJYA

MONTHLY NEWS MAGAZINE FOR CHILDREN

ISSUE 05 January 2022 Rs.85/-



**Honouring The Man
Who Knew Infinity**

National Energy Conservation Day

December 14

Save
Energy Resources

Let's
SAVE THE
WORLD
TOGETHER



Reduce Energy
Consumption
and use it
Efficiently



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Help extended to someone financially or otherwise weaker should happen with genuine intent and be a humanitarian gesture. This applies equally to a nation offering help to another, especially in an increasingly interconnected world. There have been several positive examples of this type in recent history when natural calamities struck or when a crisis like the pandemic happened. Unfortunately, there are also unsavoury instances of larger nations 'helping' others with ulterior motives and ensnaring hapless smaller countries. There is a lot to learn from geo political matters around the world. What then is the way out?

सर्वंपरवशंदुःखंसर्वमात्मवशंसुखम् ।
एतद्वदियात्समासेनलक्षणंसुखदुःखयोः ॥

(Translation: Everything that is in other's control is painful. All that is in self-control is happiness. This is the definition of happiness and pain in short.)

As the popular saying goes, self help is the best help. Self-reliance is not just a matter of independence but responsibility too. It should be the goal of every individual or nation. India has been making serious attempts to achieve this in many ways since independence. Visionary leaders like Sardar Patel and Varghese Kurien made this possible with respect to milk production. Currently, initiatives like Atmanirbhar Bharat aim for self-sufficiency in various fields including the defence equipment manufacture.

Happy to bring you inspirational real-life ventures by individuals and the nation.

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:

- We don't want to print more than what is required and
- Keep the cost of the print version (plus postage) within reasonable limits.

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

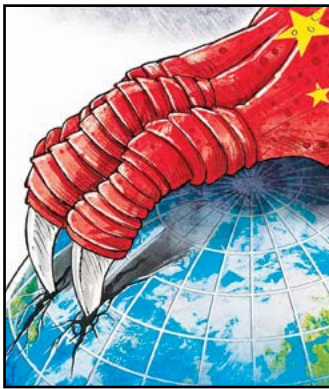
So, it will greatly help us if you could fill in the details in the link provided.

<http://Inkiy.in/Prajya-PRN>

Happy Reading !



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China's Debt Trap Diplomacy

Debt-trap diplomacy is a concept in international finance used to describe a powerful lending country or institution extending debt to a borrowing nation partially or solely for the lender to increase its political leverage. The term “debt-trap diplomacy” originally associated with Indian academic Brahma Chellaney, started from the introduction of the Belt and Road

Initiative by Chinese President Xi Jinping in 2013.

Belt and Road Initiative (BRI)

BRI for short is a global infrastructure development strategy adopted by the Chinese government to invest in nearly 70 countries and international organizations. It involves building both hard infrastructure such as rail and road links and soft infrastructure

China's development policies and BRI are called debt-trap.



such as trade agreements and a common commercial legal structure with a court system to police the agreements.

concessional loans with long grace periods to developing countries mostly for their large-scale infrastructure projects.

BRI covers two aspects:

- ▶ **The Silk Road Economic Belt** - a land route to connect the underdeveloped provinces of western China through Central Asia.
- ▶ **The 21st Century Maritime Silk Road**- a sea route to connect China's rich coastal provinces with SE Asia to Africa via ports and railways.

The Truth of BRI

China's development policies and BRI are called debt-trap because once the countries fail to return the loan, they are said to be coerced to support China's geostrategic interests. China has also been accused of imposing unfair trade and financial deals when cash-poor countries are unable to resist Beijing's money.

China's Expanding Global Influence

China has been using the financial tool of debt in a bid to grab considerable power in India's neighbouring countries besides giving a renewed fillip to gain rapid political and economic ascendancy across the globe by dispensing billions of dollars in the form of

Debt Concession and its aftermath

Recent actions taken by China in exchange for debt relief have caught international media and diplomatic attention.

In Sri Lanka, for instance, control of the Hambantota port project went to China for 99 years after Sri Lanka found itself under massive debt owed to Beijing. This allowed China control over a key port positioned at the doorstep of its regional rival India and a strategic foothold along a key commercial and military waterway. Similarly, in exchange for relief, China constructed its first military base in Djibouti; and Angola is repaying multibillion-dollar debt to China with crude oil thus creating major problems for its economy.



China's "debt-trap diplomacy"

China is funding dual-use infrastructure projects from the Pacific to the Horn of Africa, fuelling "debt traps" that will give Beijing leverage to gain strategic and military power



Sources: Bloomberg, Lowy Institute, U.S. Naval Institute Picture: Getty Images © GRAPHIC NEWS





China through OBOR can increase India's political cost of dealing with its neighbours thus blunting its foreign diplomacy.

Indian risk on Foreign Loans

India has not entered into any loan agreement directly with China. However, it has been the top borrower of Asian Infrastructure Investment Bank (AIIB), a multilateral bank wherein China is the largest shareholder (26.6% voting rights) and India the second (7.6% voting rights) among other countries. China's vote share allows it veto power over decisions requiring super-majority.

There is a possibility that loans provided to India may pave the way for Chinese firms to enter and gain experience in the booming Indian infra market.

Will the debt trap affect India?

Geo-strategically India may be forced to accept the Kashmir-controlled Pakistan region in view of the ongoing projects located there. China through OBOR can increase India's political cost of

dealing with its neighbours thus blunting its foreign diplomacy.

How much money does the world owe China?

China has given \$1.5 trillion directly to 150 nations making China the world's biggest creditor and overtaking the IMF and World Bank. It has also made unreported loans worth \$200bn. According to the Kiel Institute for the World Economy between 2000 and 2017, the world's debt to China rose from \$500bn to a staggering \$5 trillion – about 6% of the world's economic output. China has invested billions in the China-Pakistan Economic Corridor (CPEC). Pakistan's debt to China has massively increased in just under 3 years.

Pakistan's Debt to China

2017- \$7.2 billion
 2019 - \$19 billion
 2020 - \$30 billion





The Covid pandemic has pushed the cash strapped developing nations into crushing debts mostly from financial institutions.

As of 2020 CPEC loan is 6% of Pakistan's GDP.

China has built the Magampura Mahinda Rajapaksa Port and Mattala Rajapaksa International Airport in Sri Lanka. The loan to build these projects were given by Exim Bank of China to the Sri Lankan government. The Magampura Port was built for US\$361 million by the Chinese firms and later due to the inability to pay the debt by the SL government, China took the port on lease for 99 years.

The economy of African countries is becoming increasingly unstable and according to the International Monetary Fund (IMF), the African economy will shrink by 2% in 2021. It is due to the loans that the countries are unable to pay China, which has increased significant influence on many aspects of the continent's affairs.

As of 2020, the countries in Africa with the largest Chinese debt are Kenya (\$9.8 billion), Angola (\$25 billion), Ethiopia (\$13.5

billion), Zambia (\$7.4 billion), the Republic of Congo (\$7.3 billion), Sudan (\$6.4 billion) and Nigeria (\$3.1 billion).

Conclusion

The Covid pandemic has pushed the cash strapped developing nations into crushing debts mostly from financial institutions. But China's Belt and Road Initiative (BRI) has compounded the debt burden many times over with hidden loans worth \$385bn. As a result, many of these countries have to repay more money than they might think. These loans are structured in a way that is hidden from the World Bank.

Further by making massive trade and investment deals with Latin America and Africa, China had established its presence as a superpower along with the European Union and the United States. By dragging the poor countries to its debt trap China is building its dominance in the world.





PETR FIALA

PM of the Czech Republic

In autumn 2020, he became the national leader of the newly formed electoral coalition SPOLU.

Prof. Dr Petr Fiala took over as the Czech Republic's new prime minister in an unusual ceremony, with COVID-stricken President Milos Zeman speaking from behind a plastic barrier.

Born on 1st September 1964, Petr Fiala studied Czech and History at the University of Brno, then worked as a historian in a museum. In the eighties he participated in independent civic activities against the communist dictatorship.

In his extensive scientific work, he specializes in comparative political science and European politics. He has authored more than 300 professional studies published in a number of countries.

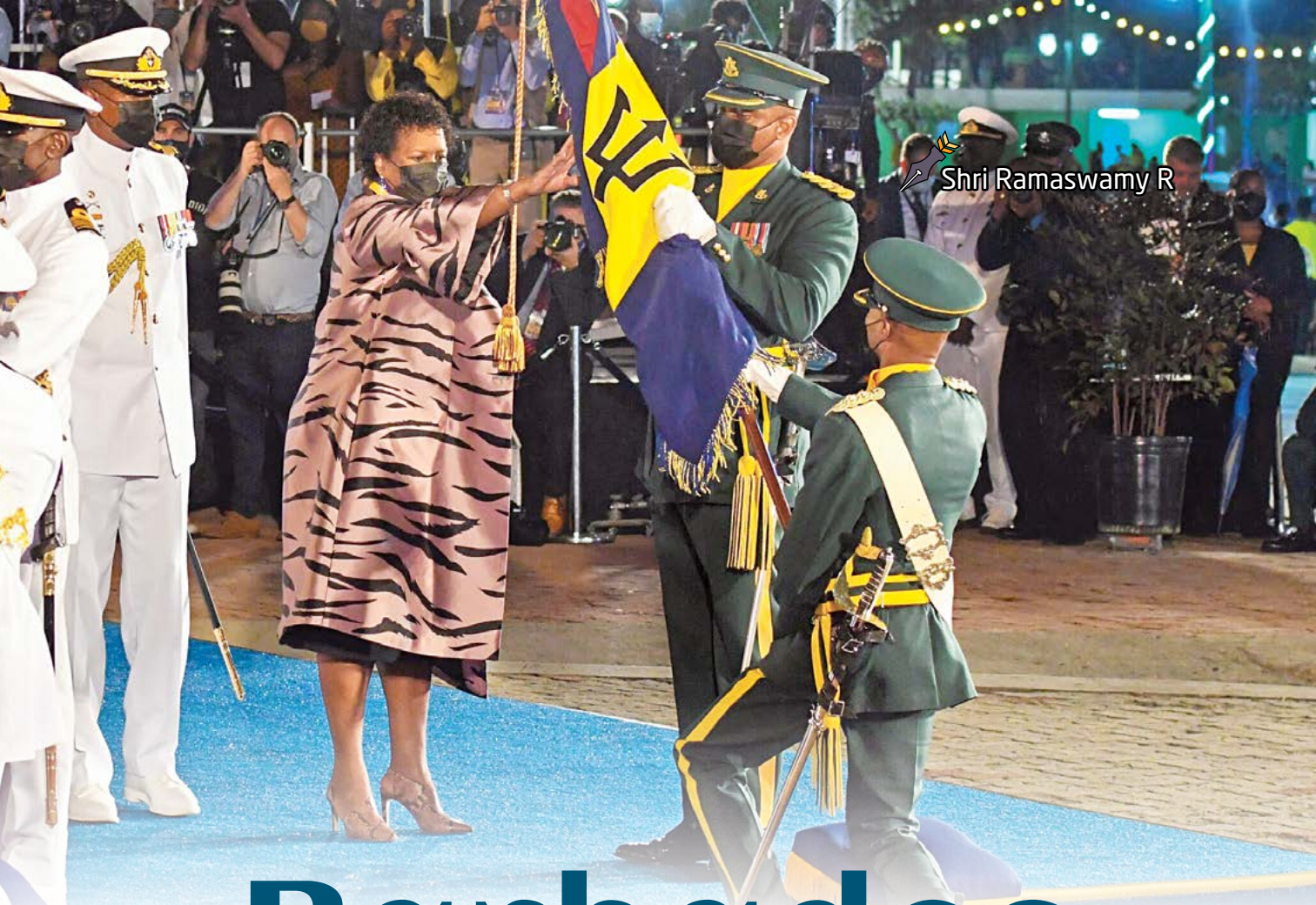
He held a number of public and professional positions, was a member of the Council of the



Institute for the Study of Totalitarian Regimes, and served as the Chief Scientific Advisor to the Prime Minister.

In autumn 2020, he became the national leader of the newly formed electoral coalition SPOLU. In October 2021, SPOLU won the parliamentary elections with 27.8%. The campaign's slogan was "We will bring the Czech Republic together." Fiala said that SPOLU wants an "economically capable and educated Czechia".





Shri Ramaswamy R

Barbados

Declared **New Republic** After

400 Years

On 30th Nov 2021, Barbados became world's newest Republic. The country cut ties with British Monarchy. Queen Elizabeth was officially removed as Head of State, 400 years after the Island became a British colony. The last Governor General Dame Sandra Prunella Mason took over as President.

Barbados is the eastern most among the islands in the Caribbean

Sea between North and South America. Its area is 439 sq.km. with a population of 2.87 lakhs. **Bridgetown** with population of 1.2 lakhs is their capital city.

Factors leading to Declaration of Republic

From the 16th century onwards, ancestors of the people of Barbados, almost 95% blacks, were forcefully brought from Africa to work as



Barbados depends on tourism, international business sector and foreign direct investment to drive their economy.



slaves in sugarcane plantations. The profits and wealth generated were transported to the UK, while the people remained poor as slaves, sharing a painful past with Britain.

1920s - Barbadians pushed for self-governance along with the demand for the country retaining more of profits from economic growth.

1940s and 50s - Barbados developed political ties with neighbouring Caribbean islands.

1958 - West Indies Federation of 10 countries including Barbados was created.

1966 - Barbados peacefully negotiated and received Independence on 30th November.

1970s and 80s - Barbados, oldest continuing parliamentary democracy since 1650. With a highly educated population, was known as "**Little England**". There was good economic growth with manufacturing led by companies like Intel.

1990s - Oil price hike and joining World Trade Organization and complying to their norms caused a slump in the economy. Manufacturing units shifted out of

the country to save costs. Between 1993 and 2000, long term economic growth was only 2.7%.

Since 2000, UK trade with EU countries increased at the cost of trade with traditional partners. Barbados and other Caribbean countries had to look for other markets in North and South America. This weakened their ties with UK.

Barbados depends on tourism, international business sector and foreign direct investment to drive their economy. But since 2020, the pandemic has taken a severe toll on their tourism and affected the industry badly.

Despite having severed ties with the Monarchy, Barbados still remains in the Commonwealth. Many spheres like system of government, education, architecture, etc., have the British influence. Now the country will be ruled by representatives of citizens body, thereby directly listening to people's grievances and reflecting their aspirations. This move has also sparked debates in Commonwealth nations like Australia, Canada and others whether to still remain under British Monarchy.





Magdalena Andersson

– Sweden’s First Female Prime Minister

History was made on 24th November, 2021 when Sweden’s first female Prime Minister, Magdalena Andersson resigned just seven hours after her appointment. Less than a week later, she was re-elected to the post, in a very clear indication of the tumultuous political climate of the Nordic state.

The leader of the former Social Democratic-Green coalition, Andersson’s budget failed to pass in the parliament, defeated by an alternate proposal drawn up by the anti-immigrant, far-right opposition, the Sweden Democrats. Her coalition partner, the Green Party, quit the government in protest. This forced Andersson

**On 29th
November
Andersson
was
re-elected as
PM leading
a single-
party ruling
government.**



to step down as well, following a constitutional practice that a coalition government should resign when one member party quits.

On 29th November Andersson was re-elected as PM leading a single-party ruling government. As the Social Democrats hold only

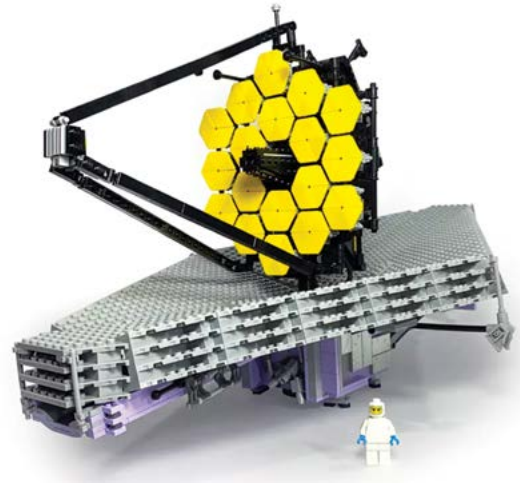
100 seats in the Parliament, she will have to rely on the support of the other parties to pass legislation until the general elections in September 2022.

According to Swedish law, a candidate only needs half of the MPs not to vote against them. From the 349 members that make up the parliament, 117 backed Andersson, while 57 abstained, winning her the seat by a single vote. Andersson's election was followed by a standing ovation, as it occurred almost a hundred years after Sweden extended women the right to vote.

Andersson is also the Social Democratic Party's second-female leader. Prior to this, she served as the Minister for Finance under her predecessor Stefan Löfven's cabinet from 2014.



How James Webb Telescope Expands Our Understanding of the Universe



Early Christmas morning, the James Webb telescope was launched atop an **Ariane-5** rocket after more than twenty years of development and delays. Considered a scientific successor to the Hubble, the telescope will peel back the curtains of the universe to study the earliest stars and galaxies.

Webb is currently on a 29-day voyage to the Lagrange-point 2 (L2) observation spot, a million miles away from Earth. En route, it will slowly deploy various parts using hundreds of release mechanisms that need to work perfectly. It will be six months before Webb can begin capturing snapshots of the universe.

According to the European Space Agency, Webb will function

as a sort of ‘time machine’, observing a part of space and time never seen before. It will focus on the birthplaces of the first generation of stars, formed over 13.5 billion years ago, which is just a 100 million years after the Big Bang.

Around this time, the universe was extremely hot. When it started cooling, it gave rise to the basic elements present in stars - hydrogen and helium. **Webb’s primary mirror, made of 18 hexagonal gold-plated beryllium, and other instruments will be capable of peering through the dust clouds around protostellar cores - the earliest stages of star birth.**

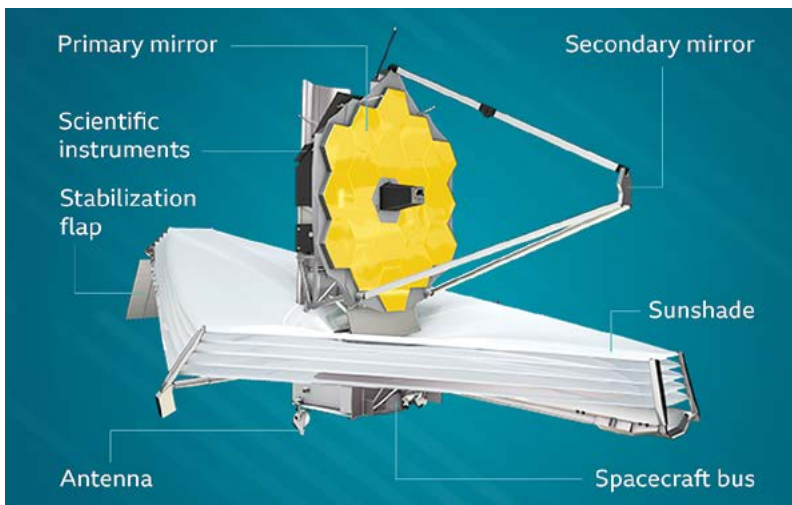
The aging Hubble telescope detects ultraviolet and visible wavelengths emitted from the

nearby stars. But the light from the very first luminous bodies in deep space has been **red shifted** (stretched to a point where its color has changed) due to the constant expansion of the cosmos. This appears to us in the form of infrared (IR) or heat radiation. Webb’s sensors are designed to collect this IR light with a high degree of sensitivity and accuracy.

The telescope will also detect molecules common to Earth - methane, water, carbon dioxide and complex minerals like silicates. These are the building blocks of life, and may be indicative of a habitable **exoplanet** (worlds orbiting around other suns). This is done by employing a technique called **transmission spectroscopy** to examine light filtered through a planet’s atmosphere.

As many exoplanets resemble Uranus and Neptune, Webb will also examine our own solar system to provide insights for planetary formation. Aside from examining initial galaxies, the telescope will also study super massive black holes in their centers.

The James Webb Space Telescope was named after the administrator of NASA in the 1960s.





Indian Architect wins Royal Gold Medal 2021



Indian architect **Balkrishna Doshi** has been awarded the Royal Gold Medal 2022, one of the world's highest honours in architecture.

The award is bestowed upon visionaries who have shaped the advancement of architecture. President of Royal Institute of British Architects (RIBA), Simon Allford commented that "... his work is that of an original and independent thinker – able to undo, redo and evolve."

Born in 1927 in Pune, Doshi studied at the Sir J. J. College of Architecture in Bombay, before working for four years with Le Corbusier as senior designer in Paris and for four more years in India to supervise projects in Ahmedabad.

Le Corbusier is a pioneer of modern architecture. "Both my gurus Le Corbusier and Louis Kahn received the medal, so I'm truly, truly humbled and touched," said Doshi.

The 94-year-old Ahmedabad based architect is well known for his designs that remain closely connected to the grassroots of our country; to its climate, crafts, and technologies both old and new.

In a century where architects can create designs that are independent of local style, tradition and climate, Doshi has always created buildings that celebrate the natural habitat.

Some of his iconic buildings are Atira Guest House, Ahmedabad, low-cost housing; Tagore Hall & Memorial Theatre, a 700-seat auditorium in Ahmedabad; Kanoria Centre for Arts, an arts and creative hub; Aranya low-cost Housing, Indore, which won the Aga Khan Award for Architecture in 1995.

One of the most important lessons we all can learn from Doshi is to be open, curious and childlike. Being open to learning, growing and sharing is what has kept him young and his designs still relevant.



Aranya Low Cost Housing, Indore



CEPT, Ahmedabad



PUTIN'S Visit to India



Russian President Vladimir Putin visited India to meet with Prime Minister Modi and other government officials in December 2021. Meetings were held to discuss Indo-Russian relations and to sign a number MoUs between the two countries.

Since the dissolution of the Union of Soviet Socialist Republics (USSR) into Russia, India has maintained strong bilateral ties with the country. Termed as a “special and privileged strategic partnership”, the partnership has five major components: politics, defence, civil nuclear energy, anti-terrorism co-operation and space.

Indo-Russian relations have only strengthened over the period of the last 10 years. This is evident in the sixth component that has grown

in importance: economy and trade. Both countries are looking to reach bilateral trade worth 32 lakh-crore rupees by 2025.

A 99-point joint statement released highlights the major topics of discussion between the political leaders and their strategies on how the two countries can work together and how the Covid-19 pandemic has affected industries and trade.

Cooperation in Covid-19 Pandemic

The **Sputnik-V vaccine** was a major topic of discussion alongside other medical supplies that were exchanged to meet the needs of each country. India’s assistance in supplying Russia with paracetamol and other



The need for negotiations on a trade agreement between India and The Eurasian Economic Union was the primary topic of discussion.

antibiotics during shortages and Russia providing ventilators and oxygen concentrators during the second phase were gestures of humanitarianism. Plans to resume direct cargo and passenger flights between the two countries were discussed.

Economy

The need for negotiations on a trade agreement between India and The Eurasian Economic Union was the primary topic of discussion. Both countries welcomed the holding of the 3rd edition of the India-Russia Strategic Economic Dialogue (IRSED) on 15th April 2021 in virtual format. Russian companies were encouraged to participate in the Make in India and Atmanirbhar programme.

Cooperation in the Russian Far-East

PM Modi reiterated his commitment to be a reliable partner

of Russia in the development of its far-east region. Indian companies in the “energy, transport and logistics, maritime connectivity, diamond processing, forestry, pharmaceuticals & healthcare, tourism and humanitarian fields have been identified” as areas of further cooperation.

The Afghanistan Issue

Both countries discussed the evolving situation in Afghanistan. Priorities included ensuring “formation of a truly inclusive and representative government, combating terrorism and drug trafficking, providing immediate humanitarian assistance and preserving the rights of women, children and minorities.”

The partnership is a coalition of two of Asia’s largest countries; and while the effort to make it work will be immense, the dividends expected will be worth it, strengthening both at a global level.



ISRO

signs pacts to launch

FOREIGN SATELLITES

The Indian Space Research Organisation (ISRO) partners with many companies to launch satellites into space. This is done through New Space India Limited (NSIL), the commercial arm of ISRO. Established in 2019, the main objective of NSIL is to scale up industry participation in Indian space programs.

Satellites are launched into space aboard two rockets designed and developed by ISRO, the **Polar Satellite Launch Vehicle (PSLV)** and **Small Satellite Launch Vehicle (SSLV)**. *These rockets have been instrumental in launching more than 120 Indian made satellites into earth orbit, of which 12 are student made satellites.*

Now NSIL has entered into six launch service agreements with foreign companies from 4 other countries to help launch their satellites into space using the PSLV during 2021-2023. This partnership is of particular significance as it is expected to bring in large amounts of revenue and invaluable international partnerships.

Union Minister of Atomic Energy and Space Dr. Jitendra



SSLV-3

Height	: 22.7m
Lift-off weight	: 17 t
Propulsion	: All Solid
Payload mass	: 40 kg
Orbit	: Low Earth Orbit



PSLV-XL

Height	: 44m
Lift-off weight	: 320 t
Propulsion	: Solid & Liquid
Payload mass	: 1860 kg
Orbit	: 475 km
	: Sun Synchronous Polar Orbit (1300 kg in Geosynchronous Transfer Orbit)

Singh said that these are expected to help India earn 132 million euros.

ISRO has partnered with many countries to launch their satellites on board the PSLV

from 1999 and has launched 342 satellites from 34 other countries; the most prominent among them being the USA, the UK, Canada and Germany.



PM Modi gets Bhutan's Highest Civilian Award

Modi is the first foreign head of government to receive this award.

Prime Minister Narendra Modi has been conferred with Bhutan's highest civilian award, the 'Ngadag Pel giKhorlo' or 'Order of the Druk Gyalpo'. The King of Bhutan announced this on 17th December 2021, Bhutan's 114th National Day. Modi is the first foreign head of government to receive this award.

Established in 2008 by King Jigme Khesar Namgyel Wangchuck, this is awarded to people who have dedicated their lives to serving Bhutan's nation and people. PM Modi has been selected as the recipient of this award to recognise his outstanding contribution to the growth of the relations between India and Bhutan. The king "highlighted all the unconditional friendship and support Modiji extended over the

years and particularly during the pandemic", said Bhutan PM Lotay Tshering.

PM Modi shared his gratitude via Twitter: "Thank you, Lyonchhen @PMBhutan! I am deeply touched by this warm gesture and express my grateful thanks to His Majesty the King of Bhutan."

Last year, he was awarded the **Legion of Merit in the highest degree of the chief commander** by the US president in recognition of his leadership and vision for India's emergence as a global power and his contributions to advance the India-US strategic partnership. He has also received top honours from countries such as Saudi Arabia, Russia, the UAE, Palestine, Bahrain, Afghanistan and the Maldives.





Garib Kalyan Anna Yojana

extended till March 2022

The pandemic caught us all of a sudden and made lives extremely difficult especially for people below the poverty line. The nationwide lockdown had led to thousands of daily wage workers and informal sector entrepreneurs losing earning opportunities.

The Government swung into action and announced a package under the PM Garib Kalyan Anna Yojana as part of Atmanirbhar Bharat to supply free food grains to the migrants and the poor. Under this scheme GOI declared to provide free resources of 5 kg wheat or rice

and 1 kg of preferred pulses for 80 crore poor people.

It had sensitized all the states and union territories to complete the distribution of free food grains in a time bound manner for a period of three months starting from April-June 2020. The Centre approved further allocation of additional food grain to National Food Security Act beneficiaries. However, due to the continuation of the pandemic, the government kept monitoring the situation and continued to extend the duration of this scheme time and again.

Presently it has been extended till March 2022 and this was announced by the PM ahead of the beginning of the winter session of the Parliament. With a cost of nearly Rs. 2,60,000 crores, the scheme assures that poor people will have food to cook in their homes.





DMRC Launches Driverless Train Operations

The first ever unattended train operation (UTO) was inaugurated last year on 28th December.

On 25th November 2021, the Delhi Metro Rail Corporation (DMRC) launched driverless train operations on the Pink Line (Line 7), bringing the single longest corridor in the state into the network. This has brought the total stretch of the network to almost 97km, ranking it the 4th-largest worldwide.

This gigantic technological leap was possible thanks to the **communication-based train control (CBTC)**, a state-of-the-art signalling technology that is safer and more efficient than the technology used in older Metro corridors.

The first ever unattended train operation (UTO) was inaugurated last year on 28th December, on the Magenta Line (Line 8) by PM Modi. The Magenta Line stretches almost 37km from Botanical Garden to Janakpuri West.

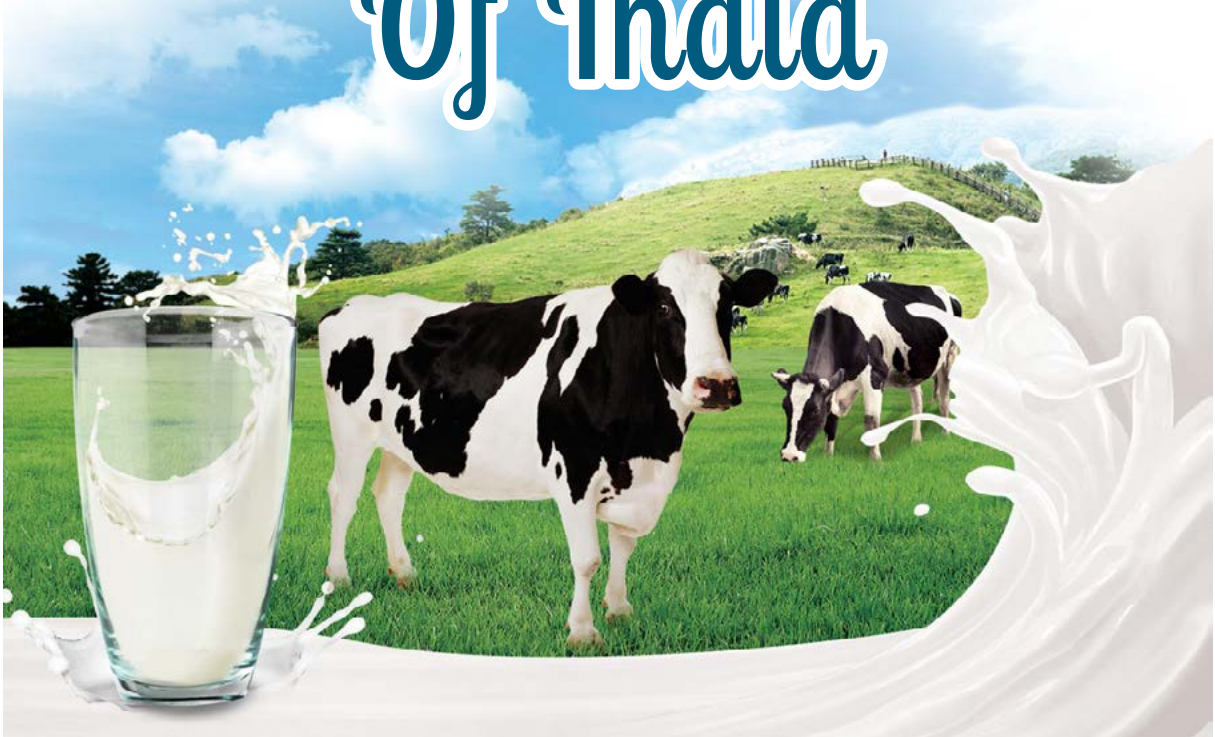
These operations were realized due to changes in the general rules for running trains, which no longer require the presence of drivers to handle emergencies. Instead, ‘roaming attendants’ will be moving up and down the trains, helping passengers in need, and closing the doors.

The Pink Line that runs 59km from Majlis Park to Shiv Vihar was supposed to commence in early 2021. The delay was due to a missing section at Trilokpuri, which was bridged in August. Union Minister Hardeep Singh Puri and Delhi Transport Minister Kailash Gahlot inaugurated the Pink Line operations by video conferencing.

In 2023, Phase IV of the project will cross the 100-km mark, with the addition of the 12.5 km Maujpur-Majlis Park extension of the corridor into the DMRC network.



The Milk Man Of India



Bharat and Milk

The Rig Veda says that cow provides in its milk the curative and preventive effects of the medicinal herbs it eats. Cow ghee has been an integral part of the yagnas since Vedic times. India has had an ancient tradition of dairying with rich knowledge widespread across the rural communities.

Later the British established military dairy farms at Allahabad, Bangalore, Ooty and Karnal to serve its army. These could not supply adequately to urban consumers who

had to depend on milk vendors who sold milk door to door. The vendors resorted to artificial methods to increase the lactation period of the cattle, leading to sterility in the cattle. The unproductive cattle were sold to slaughterhouses. This drained the country of its genetically superior breeds. Post World War II, processed milk and related products became available albeit on a modest scale in major cities. But the dairies approached the business only from a limited perspective and not concerned about



The credit of transforming India from being a milk deficit country to the dairy powerhouse of the world goes to Dr Varghese Kurien.

improving the breed of milch cattle or the knowledge bank available in the nation. In the process both the producers and consumers were exploited. When the British finally left, dairying was in a crippled state with low capacities and lack of knowhow. India was crying for milk.

The credit of transforming India from being a milk deficit country to the dairy powerhouse of the world goes to Dr.Varghese Kurien.

Early Years

Born on 26th November 1921 in Kozhikode, Kerala he did his schooling in Coimbatore, Tamil Nadu. He graduated in Physics and went on to study mechanical engineering. Kurien wanted to join the army as an engineer but on his mother's, persuasion joined the Tata Steel Technical Institute, Jamshedpur but did not stay there long. He then spent nine months in the Imperial Institute of Animal Husbandry, Bangalore before leaving to America with a GOI scholarship to study Dairy Engineering. He also acquired a masters in Metallurgy and Nuclear



Physics. He returned to India in 1948. In 1949, Kurien was sent by the GOI to run its creamery at Anand, Gujarat in the dairy division. He gained experience in dairy equipment during this period under his mentor Shri.Tribuvandas Patel.

AMUL and After - Operation Flood

Kurien established the dairy cooperative, Kaira District Cooperative Milk Producers' Union Limited (KDCMPUL) popularly known as AMUL (Anand Milk Utpadak Ltd.) Dairy), at Anand, in 1950.





“Operation Flood can be viewed as a twenty-year experiment confirming the Rural Development Vision.”

The forerunner to this was the Milk producer’s co operative established in 1946 at Kaira, primarily the vision of Sardar Vallabhbhai Patel. AMUL later made way for a larger union called the Kaira District Co-operative Milk producer’s union and then the Gujarat Co-operative Milk Marketing Federation.

Impressed, the then PM Lal Bahadur Shastri requested Dr.Kurien to replicate the AMUL model across India. The National Dairy Development Board (NDDB) was born in 1965 with Kurien as the founder chairman. He also founded the Institute of Rural Management (IRMA) in 1969. **In 1970 Operation Flood was launched to make India self-sufficient in milk.** Dr.Kurien who spearheaded the project came to be called the Father of the White Revolution.

Operation flood Phase 1 (1970-1980)

- Planned by NDDB.
- Financed by the sale of skimmed milk powder and butter oil gifted by the European Union (EEC then) through the World Food Programme.
- 18 of India’s milk sheds were linked with consumers in Delhi, Bombay, Madras and Calcutta.

Phase 2 (1981-85)

- Number of milksheds increased from 18 to 136.

- A self-sustaining system of 43,000 village cooperatives covering 4.25 million milk producers was established.
- Domestic milk powder production increased from 22,000 tons to 140,000 tons by 1989.
- Direct marketing of milk by cooperatives increased by several million litres a day.

Phase 3 (1985-96)

- Dairy cooperatives were expanded and infrastructure strengthened.
- Technology upgrade made White Revolution an ongoing activity.
- Women members and women’s dairy co-operative societies increased significantly.

Operation Flood was one of the world’s largest rural development programmes. The World Bank’s 1997 report: "Operation Flood can be viewed as a twenty-year experiment confirming the Rural Development Vision".

The programme succeeded in achieving its objectives- increasing milk production, augmenting rural incomes, alleviating poverty and offering at reasonable prices to consumers. In 1998 India became the largest producer of milk in the world pushing America to the second position.

It created a national milk grid linking producers throughout India with consumers in over 700 towns and cities, reducing seasonal and regional price variations while ensuring that the producer gets a major share of the price consumers pay, by cutting out middlemen. One is reminded of the ill-fated farm reform bills that had to be unfortunately withdrawn recently.



Dr.Kurien was a man of unimpeachable integrity, a great sense of humour, strong convictions and sharp wit.

Dr.Kurien's story would be incomplete without a reference to H.M.Dalaya, his batchmate in America and friend. It was he who invented the process of making skim milk powder and condensed milk from buffalo milk. This was a game changer and helped tackle the vagaries of distance, seasonal demand and supply.

The flip side

The programme had criticisms too. Critics felt there was too much dependence on the EEC food aid. However, the programme's evolution finally proved them wrong.

But the other criticism cannot be brushed aside. The importance given to high yielding foreign breeds resulted in the decimation of the native Indian breeds. Foreign breeds require greater feed and are not suitable to Indian conditions. Sadly, we have lost native breeds in this process. Let us judge the programme following Thiruvalluvar's advice.

குணம்நாடிக் குற்றமும் நாடி
அவற்றுள் மிகைநாடி மிக்க கொளல்

(**Transliteration:** Gunam naadi, kutramum naadi, avattrul migai naadi mikka kolal)

(**Translation:** Good and evil in man weigh well. Judge him by virtues which prevail.)

Awards and Accolades

- Padma Shri, Padma Bhushan, Krishi Ratna and Padma Vibhushan.
- Ramon Magasaysay Award – Philippines
- Wateler Peace Prize - Carnegie Foundation
- World Food Prize - World Food Prize Foundation

- International Person of the year at the World Dairy Expo
- Order of Agricultural merit – France
- Red & White Lifetime Achievements National Award (now known as Godfrey Phillips Bravery Awards).

Dr.Kurien was on the boards of several public institutions and received honorary doctorate degrees from universities worldwide. In 2014, the major dairy groups in the country, along with the Indian Dairy Association, resolved to observe Kurien's birthday, 26th November, as National Milk Day.

The person

Dr.Kurien was a man of unimpeachable integrity, a great sense of humour, strong convictions and sharp wit. He stayed at the helm of affairs at the NDDB irrespective of the government in power at the centre.

He was fiercely independent. Despite various attempts by the lobbies in the bureaucracy he ensured that his mentee Dr.Amrita Patel succeeded him at the NDDB. After a life of such immense and incomparable contribution, the affable, approachable and simple man passed away on 9th September 2012 leaving behind a great legacy. Though brought up as a Christian, he turned an atheist. His body was cremated as per his wishes.

Dr. Kurien can never be forgotten. His work has impacted generations of people of all walks of life. A popular saying in Tamil goes "a crying baby gets milk". But there has to be a mother to feed the baby. Dr.Kurien was that mother of India in the 1950s and 1960s.

Bharata Mata should forever be proud of this great son!





Foundation for Noida International Airport Laid

The first zero-emissions airport in the country is to be operational by September 2024 as PM lays the foundation for the international airport in Uttar Pradesh's Jewar. UP will be the only state in India with five international airports. The upcoming airport is situated 72 km from New Delhi Indira Gandhi International (IGI) Airport and would be the second international airport in Delhi NCR (National Capital Region) to help decongest the IGI Airport.

It will be the gateway of northern India and establish UP on the global logistics map. The aerodrome will be connected to all major highways and also linked to

the planned Delhi-Varanasi High-Speed Rail. It is designed to focus on low operating costs, seamless and fast transfer processes for passengers. The entire population of UP will get direct air connectivity and this will be a boost to tourism in Agra and Mathura.

The development of the first phase is being done at a cost of over Rs 10,050 crores. The UP government has acquired approximately 52 hectares of land to allot developed plots to rehabilitate the displaced families and incurred an expenditure of Rs 716 crore.

Highlights

- Spread over 1,300 hectares.

- Would reduce the journey time between Delhi and the airport to 21 minutes.
- Initial capacity to handle 12 million; will expand to 70 million passengers per annum by the end of phase 4.
- Developed by Zurich Airport International AG.
- The cargo terminal capacity - 20 lakh metric tons; to be expanded to 80 lakh metric tons.
- Employment opportunities for over 1 lakh people, changing the business dynamics of the region.



India's First Privately Built Fully Cryogenic Rocket Engine

DO YOU KNOW

- **Indian Space Association (ISpA)** is the apex industry body acting as a bridge between ISRO and private entities in the field of space technologies.
- **Dr. Satish Dhawan, a rocket scientist, is considered the father of experimental fluid dynamics research in India.**

Private Indian aerospace engineering firm Skyroot achieved a major milestone on 20th November 2021 when they test-fired rocket engine 'Dhawan-1'. Named in honour of Dr. Satish Dhawan, the third chairman of the Indian Space Research Organisation (ISRO), it is India's first privately developed fully-cryogenic rocket engine.

This is significant because it is completely indigenous, with all parts and manufacturing handled in India. It uses state of the art 3D Printing technology with super alloys in its construction and the engine itself is fuelled by a mixture of liquid natural gas (methane) and liquid oxygen. This makes Dhawan-1 a high-performance low-cost rocket engine and a much better alternative to rocket engines in use today.



Dhawan-1 is Skyroot's first step towards the creation of Vikram-2, a mid-sized satellite launch rocket, capable of delivering payloads up to 520 kg into orbit. While the successful launch of a completely privately built rocket is a few years away, Dhawan-1 shows that there is a promising future for private aerospace firms to bring about innovation in the field of space travel.



SAMVIDHAN DIVAS

DO YOU KNOW

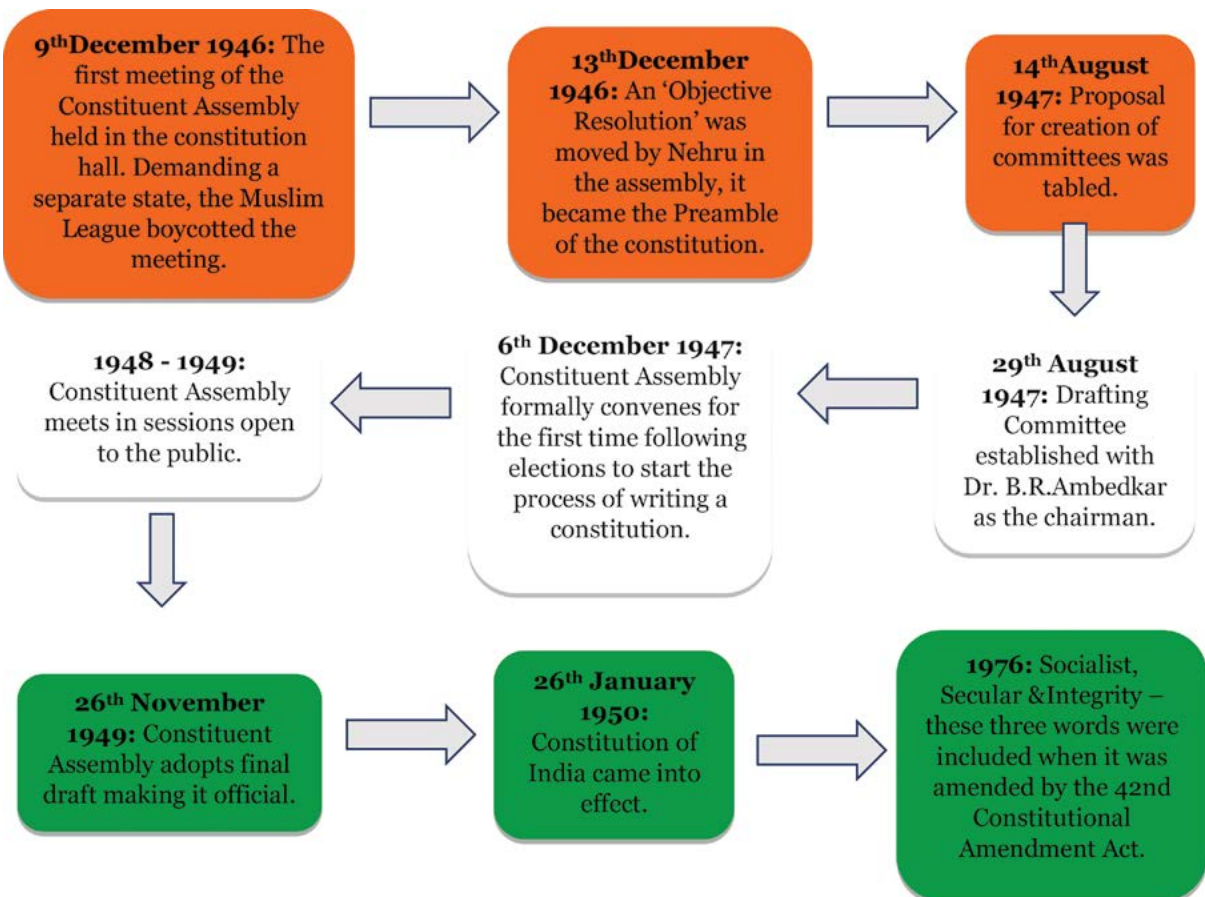
The original 1950 constitution is preserved in a helium-filled case at the Parliament House in New Delhi.

In 2015, while laying the foundation stone of Dr. B. R. Ambedkar Memorial in Mumbai to mark the 125th birth anniversary of Ambedkar, PM Modi announced that 26th November would be observed as Constitution Day or National Law Day or Samvidhan Divas. It is a day to

express gratitude to the makers of our Constitution and to reiterate our commitment to build an India of their dreams.

“It is up to us to preserve and protect the Independence that we have won and to make it really bear fruit for the man in the street.”
- Dr. Rajendra Prasad

The making of our constitution



A JOINT VENTURE OF Acer and Dixon



acer **Dixon**

removed the barriers that stood in the path of India's industrialisation process.

This stimulated industrial activities in the country. The latest development in this direction is a joint venture of two major players in the electronics sector, Acer India (A Taiwan-based MNC) and Dixon Technologies. They have signed a partnership deed to manufacture up to 5,00,000 laptops annually at Dixon's state-of-the-art manufacturing facility in Noida.

Acer plans to manufacture laptops under the value segment category, mainstream segment and education segment at the Dixon factory. The unit was launched by Saurabh Gaur, Joint Secretary, Ministry of Electronics and Information Technology on 24th November 2021.

With the rapid growth of information technology, India has become one of the world's largest markets for laptops and computers. Let us hope that this new initiative by Acer and Dixon would bring out technologically advanced and affordable laptops for the young Indians.

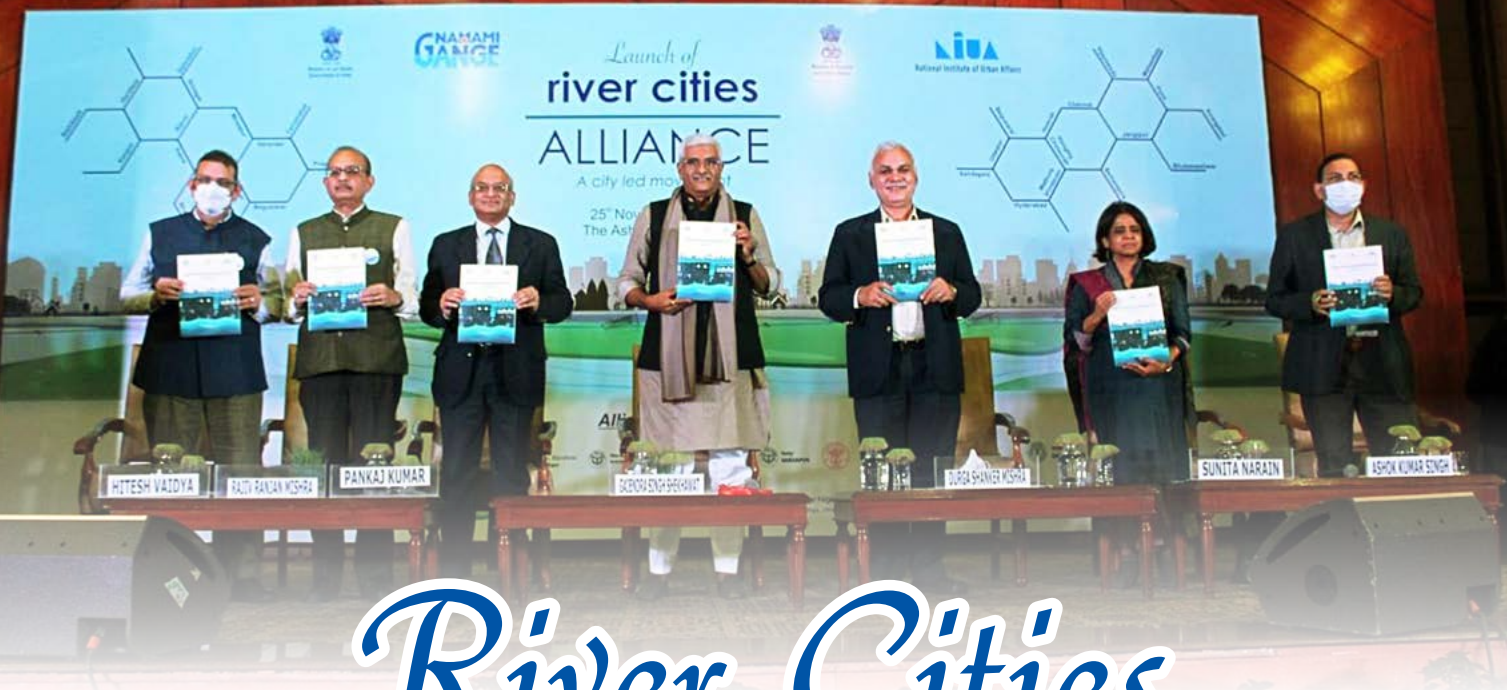
Acer plans to manufacture laptops under the value segment category, mainstream segment and education segment at the Dixon factory.

“**M**ake in India' is a lion's step! On the one hand, this initiative will increase manufacturing growth and, at the same time, will directly benefit the nation's youth in the form of employment,” Shri. Narendra Modi.

Since independence, self-reliance and import substitution have been India's primary goals of planning.

Launched by our PM on 25th September 2014, "Make in India" promotes investment, encourages innovation, enhances skill development, protects intellectual property and builds world-class infrastructure. The government has





River Cities Alliance in India

Human civilizations developed close to rivers, drawing sustenance from them.

Rivers are an essential feature of earth's topography. Human civilizations developed close to rivers, drawing sustenance from them. Rivers enriched soil and doubled up as transportation corridors during ancient times. Rivers do much more during these modern times. River water is used for industrial production, irrigation, transportation, electricity generation and regrettably as a reservoir for our filth. If water is the elixir of life, rivers are earth's life blood. Rivers redistribute minerals, thereby enriching the soil.

Ancient civilizations worshipped their rivers. They

waited for the annual flooding, patiently prayed for the flood waters to retreat, sowed their seeds and carried on with their lives. Their wisdom is eternal that is shaping our world today.

About 30 to 40% of Indians live in mega cities and towns many of which draw sustenance from close-by rivers. A healthy river ecosystem sustains healthy cities.

Keeping all this in mind, Union Minister Gajendra Shekhawat, under the aegis of Ministry of Jal Shakti (MOJS) has initiated this programme. The National Council of Clean Ganga (NMCG) and the National Institute of Urban Affairs (NIUA) have been roped in as



Netherlands was plagued by repeated flooding for many years. 40% of Netherlands is below the sea level and is a riparian country for major European rivers.

collaborators. 30 cities like Haridwar, Rishikesh, Patna, Bhubaneswar, Vijayawada, Chennai and many others are to be covered.

River cities alliance (RCA) for sustainable management of urban rivers in India is a dedicated platform for river cities to ideate, discuss, exchange information for effective management of river systems. Plenty of issues are to be addressed like minimizing water footprint, developing self-sufficiency, reducing the pollution load on rivers, and most importantly, creating a sustainable river ecosystem through recycling and reuse strategy.

Abused rivers

Rivers the world over have suffered major cosmetic interference from damming their waters, building dykes on their banks, course alteration and construction activity on their basins.

Over a period of time, planners understood that flood mitigation measures such as impounding rivers by construction of tall dykes are insensitive and futile. Better techniques are followed nowadays taking into consideration the flood atlas of a region and the natural properties of river flow.

Room for the river

Netherlands was plagued by repeated flooding for many years. 40% of Netherlands is below the sea level and is a riparian country for major European rivers. It tried constructing huge dykes along the river banks, straightened the rivers to reduce flooding over large areas etc., with limited success.

The concept “Room for the river” was born after careful scrutiny of river flow patterns. The height of the dykes was lowered enabling the

river to flood its basin; dykes were removed and constructed far away from river basins; new channels were constructed to divert flood waters; the natural meandering pattern of a river was restored and left undisturbed.

Developing countries like India with huge economies will see large rural to urban migration. If soil fertility is an index of good agricultural practices, river health can be construed as an index of thoughtful urban management.



The concept “Room for the river” was born after careful scrutiny of river flow patterns.

A comprehensive RCA is the need of the hour. Knee-jerk reactions to control flooding and river pollution are a poor strategy because rivers are not localized to one region or state. Unless the objectives, outcomes, funding and strategy are comprehensive, little can be achieved.

Many Indian cities close to a major river suffer flooding and drought repeatedly. Much can be attributed to poor planning. All these shortcomings must have weighed heavily while conceptualizing this initiative, which is all-encompassing in its appeal.

With more than 400 rivers, many perennial rivers, thickly populated cities near major river systems and water bodies, India deserves this mega project.

Its success depends on the coordination between member cities - learning from each other’s successes and failures.





Kum Kavya R

Ministry of Road Transport Spearheads India's Infrastructural Growth

The construction work on a 25-km-long stretch on the road from Munsiyari and 9-km-long road from Milam are completed.

The Ministry of Road Transport and Highways has been working tirelessly over the past five years to improve the last mile connectivity. From building roads in the border areas to e-ways, the government has multiple projects that are underway.

The three major highlights for the month of December:

1. Strategic Munsiyari-Milam Road to be complete by 2023

This strategically important high-altitude road project was started in 2012 to be completed

in 2015. Completion of this road would provide vehicle access to the last security post at the India-China border in Johar valley.

The construction work on a 25-km-long stretch on the road from Munsiyari and 9-km-long road from Milam is complete. But the 15 km road in between is covered by extremely hard rocks posing a huge challenge. Sub-zero temperatures during winter coupled with the corona virus lock down last year has further delayed work on the key project, BRO chief engineer and in charge of the project MNV Prasad said.





The projects are designed in a way that ensures bare minimum amount of tree felling.

2. Over 4,358 km of National Highways Constructed in Mountainous and Border Areas

“In the last five years, 4,358 km of National Highway have been constructed in the mountainous and border areas with an expenditure of Rs 70,733 crore,” said Nitin Gadkari, Union Minister for Road Transport & Highways.

Of these, 81 projects have been ongoing in Uttarakhand, 53 in West Bengal, 51 in Assam, 47 in Arunachal, 44 in Nagaland, 41 in Himachal, 34 in J&K, 31 in Manipur, 29 in Sikkim, 22 each in Tripura, Mizoram and Meghalaya, and two in Ladakh. And these projects will be completed between 2021 and 2023.

3. Green Highways: NHAI Plants over 2.23 Crore Trees

The National Highways Authority of India (NHAI) has planted over 2.23 crore trees along the national highways since 2018.



Also, 55.1 lakh plants have been planted in 94 projects, completed by March 2021.

Often, infrastructural development such as building highways requires cutting of trees in the Right of Way acquired by the government. The trees will be cut down by the forest department or contractors who have acquired proper permission from the forest department. The projects are designed in a way that ensures bare minimum amount of tree felling. But compensatory afforestation will be carried out by the forest department as mandated by law.





Flag Day

Since 1949, 7th December is observed as the Armed Forces Flag Day throughout the country to honour the martyrs and the men in uniform who valiantly fought and continue to fight on our borders to safeguard the country's honour. It was primarily held to give small flags to the general public and collect donations in exchange but now the day takes on greater significance as it emphasises Indians' responsibilities to care for the families of defence personnel.

After the demise of General Bipin Rawat, the Indian government has adopted temporarily the old system of



appointing the Chief of Staff Committee (CSC). Under this system, the senior-most among the three service chiefs is appointed as chairman of the CSC to ensure coordination among the three forces.

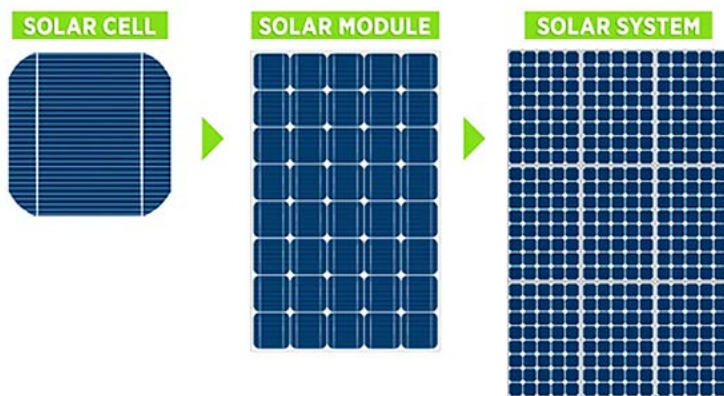
General Manoj Mukund Naravane has taken over as the chairman of the Chiefs of Staff Committee for an interim period. He will continue to head CSC till the post of the Chief of the Defence Staff is filled.

Under the new arrangement, the Air Marshal who is also the Chief of Integrated Defence Staff, will report to Gen Naravane. Air Marshal will act as Deputy Chief of Defence Staff.

INDIA'S LARGEST Solar and Battery STORAGE PROJECT

DO YOU KNOW

- ▶ **Solar module**, a solid-state semiconductor device that converts light energy into electrical energy is connected to solar cells. The solar cells absorb sunlight as a source of energy to generate electricity.
- ▶ **The world's largest solar rooftop installation on a cricket stadium (CCI, Mumbai) which offsets 840 tonnes of carbon annually was commissioned by Tata Power Solar in 100 days.**



Solar Energy Corporation of India (SECI) has given LOA (Letter of Award) for a project worth Rs.945 crore to Tata Power Solar Systems Limited to build a 100 MW solar project along with a 120 MWh Utility-Scale Battery Energy Storage System (BESS) at Rajnandgaon, Chhattisgarh. SECI is an implementing agency for many renewable energy schemes of the government of India. It will work together with Tata Power Solar Systems to make renewable energy the mainstay of our energy production.

The project, supported by the World Bank, SECI's internal resources and domestic loans will be executed in 18 months. A contract was signed by the officials of Tata

Power, SECI and the World Bank. A 100 MW solar project would approximately reduce 2 lakh tonnes of carbon emission every year. A battery energy storage system collects energy from a power plant and discharges it later to provide electricity when needed.

The scope of the order includes engineering, design, supply, construction, erection, testing, operations & maintenance and commissioning of the projects.

Tata Power Solar has a production capacity of 580MW of modules and 530 MW of cells. It has installed over 55000 solar water pumps to date along with diverse solar solutions for both urban and rural markets of the country.



VEERA VANAKKAM: Tribute to General **BIPIN RAWAT**

On 8th December 2021, India's first Chief of Defence Staff General Bipin Rawat died in a tragic helicopter crash near Coonoor, Tamil Nadu. His wife Madhulika Rawat and 12 other armed force personnel also lost their lives in the crash.

The sudden and unimaginable tragedy sent the entire nation into mourning with even a layman with very little knowledge of him weeping and saluting the man.

Born in Pauri Garhwal district of Uttarakhand, General Rawat came from an illustrious family that has served the Indian Army for generations. His father Lakshman Singh Rawat served in the 11 Gorkha Rifles and retired as the Deputy Chief of Army Staff.

General Rawat graduated from the Indian Military Academy in Dehradun coming first in the order of merit and being awarded the 'Sword of Honour'. He was commissioned into the 11 Gorkha Rifles in 1978.



He had his first military confrontation during the 1987 Sino-India skirmish against the Chinese People's Liberation Army.

The Indian troops back then successfully stood their ground. **Over the years, General Rawat became experienced in high-altitude warfare and had gained expertise in counter-insurgency operations.**

The 2015 surgical strike in Myanmar carried out by 21st battalion of the Parachute regiment came under the operational control of III Corps commanded by Bipin Rawat.



Rawat gradually rose to the ranks of General Officer Commanding-in-Chief of Southern Command and later became the Vice Chief of the Army Staff in 2016. He was appointed as the 27th Chief of the Army Staff in December 2016. He was the third officer from the Gorkha Brigade to become the Chief of the Army Staff, after Sam Manekshaw and Suhag.

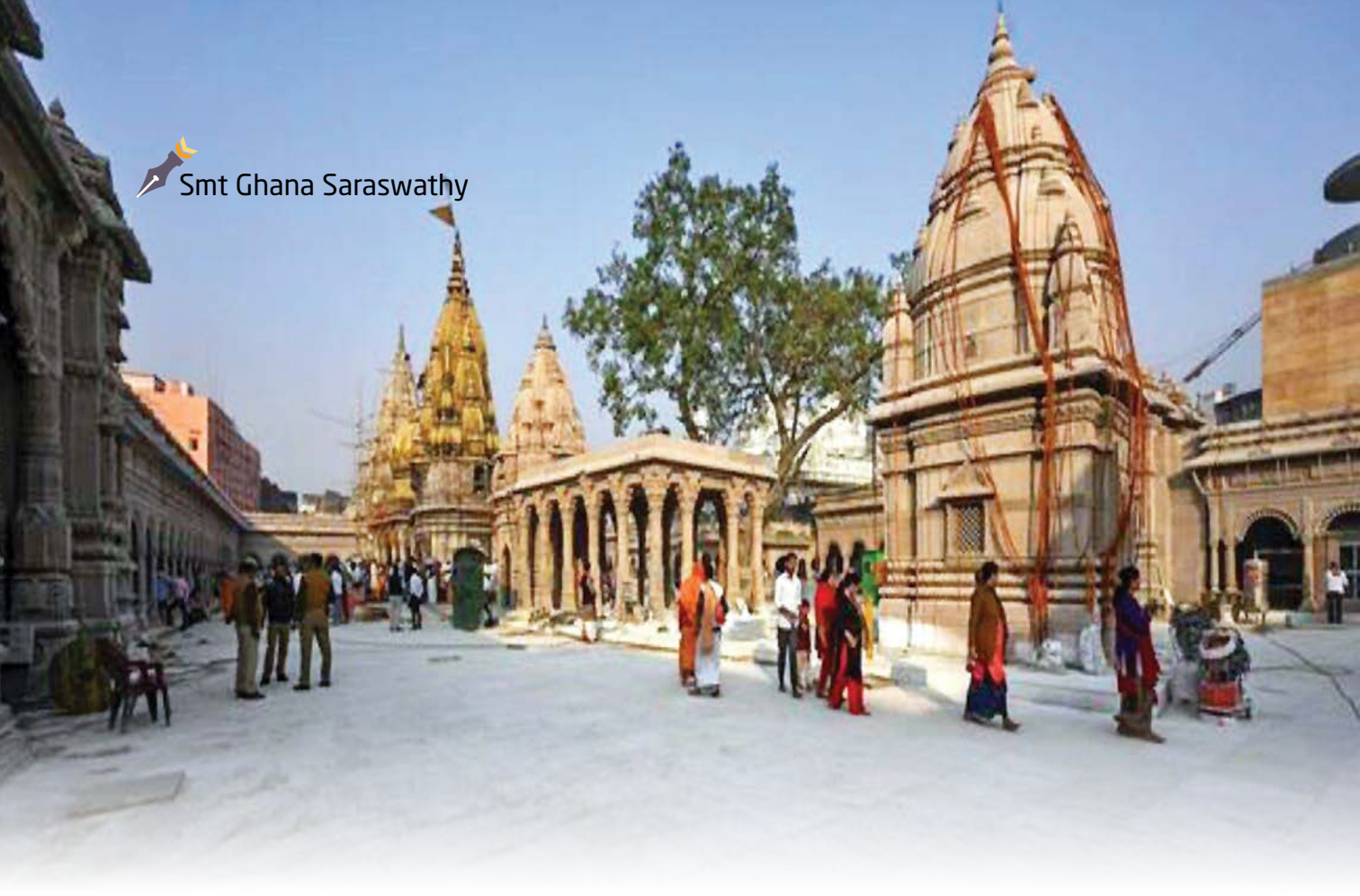
He played a significant role in pushing back the Chinese PLA during the Doklam Standoff when the Chinese had tried to construct a road near the trijunction border between Bhutan, China and India. The clash with the PLA in Galwan Valley in which the Indian Armed Forces gave a bleeding nose to the Chinese too happened under his watch.

As the Chief of Army Staff and the Chief of Defence Staff, General Rawat inculcated a high sense of professionalism in the Army and put monumental effort to transform the Indian military.

India has lost an incredible soldier and leader. His legacy shall live on.

Om Shanti!





KASHI VISHWANATH CORRIDOR INAGURATION



Kashi, located on the banks of the Ganga, is one of the world's oldest cities. Varanasi or Banaras was known as Kashi in ancient times. A visit to the temple and a bath in Ganga is believed to lead one on a path to Moksha.

Kashi Vishwanath temple has withstood the test of time and religious politics. Various Muslim rulers have demolished the temple several times.

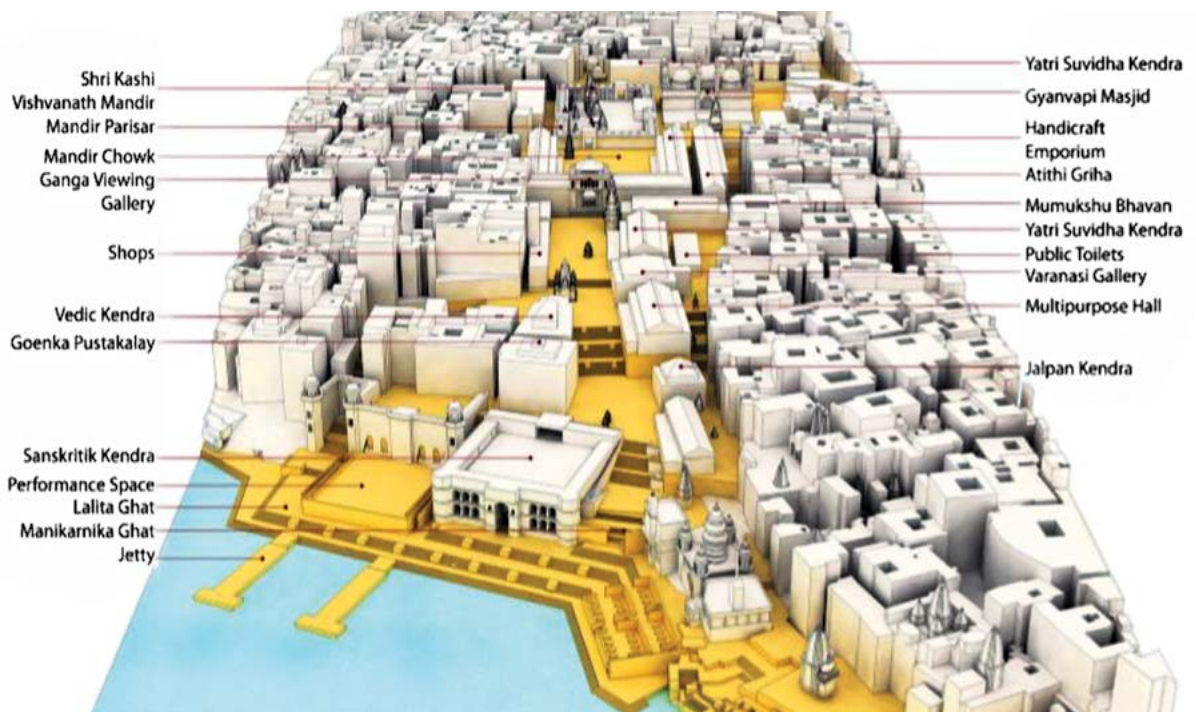
In 1194 CE, Qutb-ud-Din Aibak, a commander of Mohammed Ghori, attacked and destroyed the temple.

Sikandar Lodhi demolished it again in the 15th century. During Akbar's reign, however, Raja Man Singh renovated the temple once more. Akbar released funds and asked Raja Todarmal to rebuild the temple on its original site.

Mughal Emperor Aurangzeb demolished the temple and built the Gyanvapi mosque on the site in 1669 CE. Following this, several Hindu rulers unsuccessfully attempted to rebuild the temple.

Finally, Ahilya Bai Holkar, the daughter-in-law of the great Maratha king, Malhar Rao, constructed the current temple next to the mosque in 1780.





A dream project of PM Modi

The Kashi Vishwanath Corridor project was launched on 8th March 2019, with a construction cost of 339 crores. The temple corridor is 5 lakh square feet in size. As a result, approximately 50000-75000 devotees can enter the temple premises without causing a crowd.

After the successful completion of this project, phase I of the Kashi Vishwanath corridor was inaugurated by the PM on 13th December 2021. He took a holy dip in Ganga before the inauguration.

DO YOU KNOW ?

- ◆ Kashi Vishwanath Temple is also known as the golden temple dedicated to Lord Shiva.
- ◆ Bimal Patel (58) is the chief architect of the Kashi Vishwanath Corridor. His other major projects include Ahmedabad's Sabarmati Ashram, Delhi's Central Vista project. He received

the Padma Shri Award for contributions in the fields of Architecture and Planning in 2019.



Highlights

- The 75-foot-wide corridor connects the temple grounds directly to the Lalita Ghat. People can now take water from the Ganga and offer it to God.
- The blue theme lighting adds a dimension of beauty to the temple.
- A rudraksha tree was planted by PM Modi.





ICMR DEVELOPS TESTING KIT TO DETECT **OMICRON** WITHIN TWO HOURS

DO YOU KNOW ?

Deoxyribonucleic acid (DNA) is a molecule containing all the information for the functioning of any living organism.

Genome is an organism's complete set of DNA.

The Indian Council of Medical Research (ICMR) in Dibrugarh, Assam has developed a testing kit that detects the omicron variant of the SARS-CoV-2 in two hours. This provides much relief in the wake of the rising number of cases across the country.

A team of Regional Medical Research Centre (RMRC) for the Northeast region, led by scientist Dr. Biswajyoti Borkakoty, designed the RT-PCR assay to detect the variant from a given sample in real-time. "Internal validation has shown that the tests are 100% accurate," Borkakoty assures.

Earlier, testing used to require a minimum of 36 hours for targeted DNA sequencing (which detects

known and unusual variants within a region of interest), and 4 to 5 days for the whole-genome sequencing.

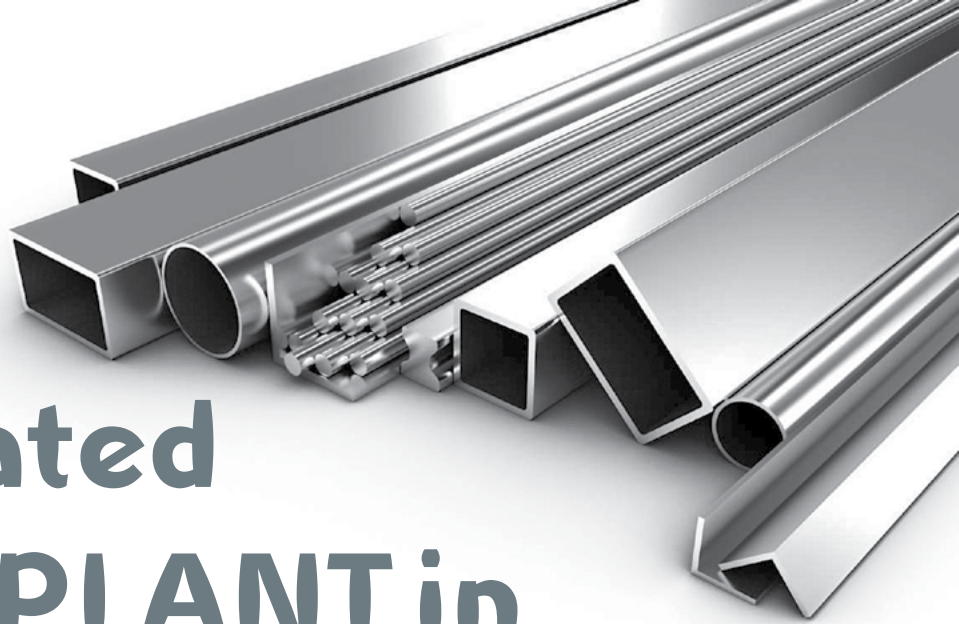
Many cases have been tallied in the country so far. GCC Biotech, a Kolkata-based company will mass-produce the kit under the public-private partnership (PPP) model.

Borkakoty is also notable as the leader of the team that successfully isolated the SARS-CoV-2 virus last year in July.

ICMR-RMRC became the third governmental lab in the country to achieve the feat.

Omicron, first detected in South Africa is the colloquial name for a variant labeled B.1.1.529 by the WHO.





Integrated STEEL PLANT in ODISHA

Over the last year, Odisha has attracted investments of about **Rs 2.70 lakh crore, employing over 77,000 people.**



Arcelor Mittal Nippon Steel (AM/NS) will invest over Rs. 1 lakh crore in Kendrapara, Odisha, to build a 24 mtpa (million tonnes per annum) integrated steel plant. This project will be completed in a phased manner over seven years, with the state focusing on extensive socioeconomic development throughout the region.

The high-level clearance authority, administered by chief minister Naveen Patnaik has approved the plan to set up the plant which will offer 16,000 jobs

and also indirect employment opportunities through ancillary and downstream industries and services.

Over the last year, Odisha has attracted investments of about Rs 2.70 lakh crores, employing over 77,000 people. According to the government, this facility will also produce 18.75 MT of cement per year, making it one of the largest cement manufacturing plants in the country.

In addition to the steel complex, the company also plans to promote MSMEs and aid in import substitution.



CMO Odisha @CMO_Odisha

The High-Level Clearance Authority (HLCA) under the chairmanship of CM @Naveen_Odisha has approved @AMNSIndia's proposal to set up a 24 MTPA integrated Steel Plant in Kendrapara district with an investment of ₹1,02,275 Cr which will create direct employment for 16000 people.



Odisha Approves Country's Largest Project in Manufacturing Sector

Further Cement Odisha's position as Steel Hub of India

- Investment of ₹1.02 lakh crore
- Direct employment to 16,000 persons
- Arcelor Mittal Nippon Steel's 24 MTPA Integrated Steel Plant in Kendrapara
- To produce 24 MT of various grades of steel, 18.75 MT of cement per year
- Indirect employment through ancillary & downstream industries, services.
- To be completed in 7 years in phases
- Company to develop a downstream industry park to promote MSMEs, help import substitution
- Give boost to ancillary industries to support the huge steel making facility



Its goal is to help create smarter, more sustainable steels for India and to the world.

A large number of ancillary manufacturing companies are expected to set up shop in this area to support the massive steel manufacturing facility.

ABOUT ARCELOR MITTAL NIPPON STEEL

AM/NS India is an integrated flat carbon steel manufacturer - from iron ore to ready-to-market products - with an achievable crude steel capacity of 9.0 million tonnes per annum (MTPA). Their manufacturing facilities comprise iron making, steelmaking and downstream facilities spread across India.

Its goal is to help create smarter, more sustainable steels for India and to the world. Safety, innovation and technology play an integral part of manufacturing operations and product development.



India Announces Chips to Start-up Programme for SEMICONDUCTOR Manufacturing

Global semiconductor chip shortage resulted when many manufacturing units shut down during the pandemic.



Semiconductor chips are essential parts of everyday technology. The processors in our smart phones, computer components, televisions, laptops, game consoles, automobiles and practically all electronics-based systems need semiconductors.

Global semiconductor chip shortage resulted when many manufacturing units shut down during the pandemic. This affected industries in three ways: an increase in price, a decrease in quantity and long waiting periods. With the pandemic still on, it is predicted that the global chip shortage will continue well into the year 2023.

There is, however, a silver lining. As part of the **Programme for Development of Semiconductors and Display Manufacturing Ecosystem** scheme, India will set up

more than 20 semiconductor design and manufacturing and display fabrication units (facilities) by the end of 2027 with a 76,000-crore investment.

GOI is specifically looking towards helping start-ups through this scheme. Companies will apply to the Ministry of Electronics & IT (MeitY) to be allocated funds to set up manufacturing facilities.

The companies selected will be expected to create a complete design to delivery ecosystem – **Chips to Start-up**; where they design chips, fabricate them, test them and prepare them for use by various global tech companies. In partnering with the government, 50% of the project costs will be borne by the government thereby creating more incentive for the companies to participate.

At least 15 units of semiconductor manufacturing are expected to be established. Foxconn, Apple's chip manufacturer and Tower Semiconductor of Israel are among those who have shown interest in setting up units in India. These units can create job opportunities in the electronics and engineering fields: over 35,000 high speciality design positions and more than one lakh in related fields.

Chips don't just make computers work, they make the whole modern world possible.





THREE INDIAN DEFENCE COMPANIES AMONG THE TOP 100

DO YOU KNOW ?

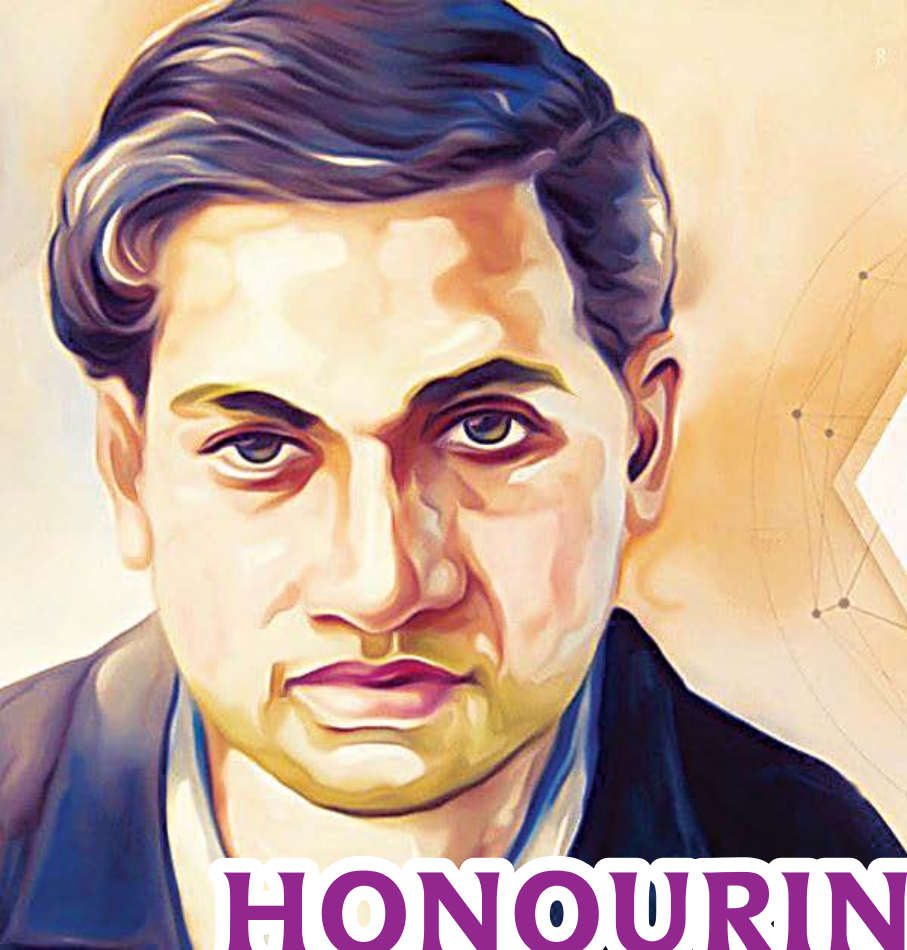
- ◆ USA has the highest number of companies in the top 100 worldwide. China is second, followed by the UK.
- ◆ **SIPRI** is an independent institute dedicated to research into conflict, armaments, arms control and disarmament.
- ◆ The aggregated arms sales of the three Indian companies are USD 6.5 billion (around Rs 48,750 crore).
- ◆ India has the smallest share among the top 11 defence manufacturing nations.
- ◆ The world's top five arms manufacturers are US-based companies: Lockheed Martin, Raytheon Technologies, Boeing, Northrop Grumman and General Dynamics.

According to the **Stockholm International Peace Research Institute (SIPRI)** which tracks global arms trade, three Indian defence manufacturers have made it to the list of top 100 global companies manufacturing arms, ammunition, military planes and equipment. The companies include **Hindustan Aeronautics Limited (HAL)** ranked at 42, **Indian Ordnance Factories** at the 60th spot and **Bharat Electronics Limited (BEL)** at 66.

In 2020, the Indian Government had announced a phased ban on imports of certain types of military equipment to strengthen self-reliance in arms production. The domestic procurement shielded Indian companies against the negative economic consequences of the pandemic. Moreover, the combined arms sales by the three companies in the Top 100 has increased by 1.7%.

Even as the global economy shrunk due to the pandemic, the arms sales, dominated by US companies have seen a growth. There is a sustained demand for military supplies by all the governments.





Shri Sivakumar R

SRINIVASA RAMANUJAN

The Great Mathematical
Genius of India

HONOURING THE MAN WHO KNEW INFINITY

“Without mathematics, there is nothing you can do. Everything around you is mathematics. Everything around you is numbers.”

-Shakuntala Devi, Indian Mathematician

Hello, Members of Gen Next!!!

**Government
of India has
declared
22nd
December
as National
Day of
Mathematics.**

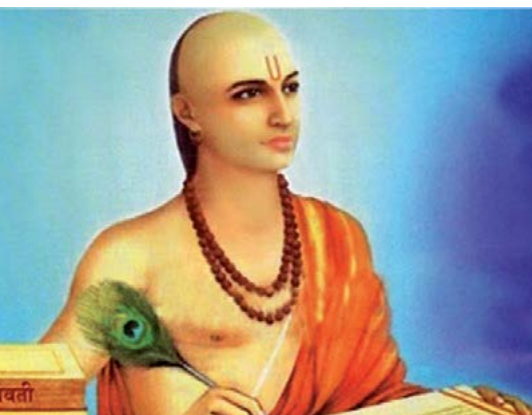
Im sure you'll agree. Well, to start with, we count our age in numbers; our date of birth, our savings, distances and sports scores are in numbers. In these days of digitization, the basis of all computer software is the binary system comprising “Zero” and “One”.

Government of India has declared 22nd December as National Day of Mathematics. Why this date, many of you may ask? This happens to be the birthday of

Srinivasa Ramanujan, undoubtedly the most outstanding mathematician of modern times.

Ramanujan is the latest in a galaxy of outstanding Indian mathematicians of all ages starting with Brahmagupta (discoverer of “Zero”), Aryabhata (discoverer of the formula for $(a+b)^2$), Bhaskaracharya (he declared that any number divided by zero is infinity) and so on.





Bhaskaracharya

Born in 1887 in Erode, Ramanujan's childhood was largely spent in Kumbakonam though he lived for some time in Kanchipuram and Madras (now Chennai) too. He had a special fondness for mathematics and used to solve mathematics problems of college students as a schoolboy.

While at school, in 1903, Ramanujan got his hands on the book *A Synopsis of Elementary Results in Pure and Applied Mathematics* by GS Carr which aroused his mathematical genius. Ramanujan verified the results in Carr's book and went beyond it, developing his own theorems and ideas.

He obtained a scholarship for collegiate education, but due to his complete absorption in mathematics, he did not do well in other subjects and consequently lost the scholarship.

In 1909, while working as an accounts clerk in Madras Port Trust, he continued his mathematical work. By coming into contact with a government official by name Ramachandra Rao, Ramanujan got an introduction to Indian Mathematical Society and his first paper was published in that Society's Journal in 1911.

In 1913 he began a correspondence with GH Hardy,

which resulted in a special scholarship from University of Madras and a grant and admission into the Trinity College, Cambridge. He went to Cambridge in 1914 and spent 5 years there collaborating with Hardy.

Ramanujan was awarded a B.A. by research degree which is equivalent to current Ph D. for his work on highly composite numbers. In 1917 he was elected to the London Mathematical Society and in 1918 he was elected a Fellow of the Royal Society, becoming one of its youngest ever members at 31 years.

He returned to Kumbakonam in 1919 and passed away a year later on 26th April due to tuberculosis. He left behind 3 notebooks and a sheaf of papers that continue to inspire mathematical work decades later.

In his notebooks Ramanujan wrote down 17 ways to represent $1/\pi$ as an infinite series. This series was used in 1985 to calculate pi to more than 17 million digits. This series forms the basis of many algorithms we use today.

In a famous anecdote, Hardy took a cab to visit Ramanujan. When he got there, he told Ramanujan that the cab's number, 1729, was "rather a dull one." Ramanujan said, "No, it is a very interesting number. It is the smallest number expressible as a sum of two cubes in two different ways. That is, $1729 = 1^3 + 12^3 = 9^3 + 10^3$."

“
While at Cambridge, Ramanujan did a lot of pioneering work on partition theory which finds application in ATMs among others.
”

This number is now called the Hardy-Ramanujan number, and the smallest numbers that can be expressed as the sum of two cubes in n different ways have been dubbed taxicab numbers. The next number in the sequence, the smallest number that can be expressed as the sum of two cubes in three different ways, is 87,539,319!!!

While at Cambridge, Ramanujan did a lot of pioneering work on partition theory. This theory finds application in ATMs among others. When you put your debit or credit card in the machine and order the machine to dispense the amount of your choice the machine divides and arranges your money before dispensing it, using Ramanujan's partition theory, which is as follows:

A partition of a positive integer n is just an expression for n as a sum of positive integers, regardless of order. Thus $p(4) = 5$ because 4 can be written as $1+1+1+1$, $1+1+2$, $2+2$, $1+3$, or 4.

It is this great mathematician that we are honouring by observing his birthday as "National Mathematics Day" in various schools, colleges, universities, and educational institutions in India. UNESCO and India have agreed to work together to spread mathematics learning and understanding. **Ramanujan Prize for Young Mathematicians is an international award jointly given by International Centre for Theoretical Physics (Italy), International Mathematical Union and the Department of Science & Technology, Government of India for young mathematicians under 45 years.**

As a part of our quest to make Bharath Mahaan, we will need many more Srinivasan Ramanujans.



Unsung Heroes

Matangini Hazra

- Revolutionary from Bengal



As India celebrates “Azadi Ka Amrit Mahotsav”, it is our utmost duty to recall the sacrifices of every revolutionary who fought for freedom. Matangini Hazra was one such gutsy revolutionary.

Early Life

Matangini Maity was born on 19th Oct 1869, in a poor peasant family, in Hogla village in Bengal. She didn't receive a formal education and became a widow at 18. She devoted herself working tirelessly for others.

Gritty like Gandhi

She was a Gandhian and was affectionately called as “**Gandhi Buri**” (Old Lady Gandhi in Bengali) for her austere life and simplicity. At 35, her fragile body did not deter her active involvement in the Indian independence movement. In her later years, she spun khadi

despite her failing eyesight as a sign of protest. She nursed people, mostly children during the smallpox epidemic.

Political Life

At 62, during the Civil Disobedience Movement (1932), she defied the Salt Act, by making salt at the Alinan Salt Centre, for which she was jailed. After release, she protested the unfair Chowkidari tax and was imprisoned at Baharampur. A year later, she attended the sub-divisional congress conference at Serampore and was grievously injured with baton blows by the police. She was jailed for breaching the security of then Governor of Bengal Sir John Anderson for showing the black flag, to protest the illegally constructed court.

Supreme Sacrifice

At 72, during the Quit India Movement (1942), Matangini led a procession of 6000 supporters, mostly women, to besiege the Tamluk Thana. The police opened fire and Hazra was shot in her arms. She continued to march chanting “Vande Mataram”. Another bullet pierced her forehead as she breathed her last with the tricolour held high.

Let us venerate the value of such a supreme sacrifice.

Jai Hind



DO YOU KNOW ?

► Hazra's statue was constructed in 1977 in Kolkata. Hazra Road in Kolkata is named after her.

► In 2002, department of Posts of India issued a series of postage stamps commemorating 60 years of Quit India Movement.



Exciting Developments in India's INFRASTRUCTURE SECTOR

Union Budget 2021 had given a massive push by allocating Rs. 233,083 crores to enhance the transport infrastructure.

With a plan to spend US\$ 1.4 trillion (1.4 lakh crores), the infrastructure sector has become the biggest focus area for the Government of India during 2019-23 to have a sustainable development.

Union Budget 2021 had given a massive push by allocating Rs. 2,33,083 crores to enhance the transport infrastructure. The government expanded the 'National Infrastructure Pipeline (NIP)' to 7,400 projects. Nearly 217 projects worth Rs. 1.10 lakh crores were completed as of 2020.

Infrastructure spending is expected to have a multiplier effect on overall economic growth, primarily based on the **Keynesian theory that aggregate demand can be reactivated by increasing public expenditure**. Investments in infrastructure can lead to direct and indirect jobs. Improved infrastructure will enhance the overall productive capacity and global competitiveness. The multiplier effect of infrastructure investment in India is a high 2.5, in the year it takes place.

Smart Cities

This mission was launched by our Prime Minister on 25th June 2015, with the main objective to promote cities that provide core infrastructure, clean and sustainable environment; a decent quality of life to citizens through 'smart solutions'.

The focus is on creation of replicable models which act as lighthouses to other aspiring cities. 100 cities have been selected to be developed as Smart Cities through a two-stage competition.



Bharatmala Pariyojana tries to optimize the efficiency of freight along with smooth passenger movement across the nation.

GOI will give financial support to the extent of Rs. 48,000 crores over 5 years i.e. on an average Rs.100 crore per city per year. An equal amount on a matching basis is to be provided by the State/ Urban Local Body(ULB).

Tenders have been issued for 6,130 projects worth INR 1,81 lakh crores. Of these, 2,898 (47 %) projects worth INR 50,422 crores have been completed (see figure), as on 28th July 2021.

Bharatmala

It is an “umbrella” programme of the ministry to enhance road connectivity across India. Bharatmala Pariyojana tries to optimize the efficiency of freight along with smooth passenger movement across the nation. It will be done through the interventions of economic corridors, feeder routes, and Inter corridors development along with the efficient movement in the National corridors, International and Border Connectivity roadways, Port and Coastal Connectivity roadways and the green-field expressways.

Phase 1 - 34,800 km of road construction by 2026. Estimated cost Rs 5.35 lakh crores. Expenditure so

far - Rs 8.5 lakh crores. Main delay is due to land acquisition.

Phase 2 - 5,000 km of road will be covered.

Sagarmala

It is the flagship programme of the Ministry of Shipping to promote port-led development along India’s 7,517 km coastline, 14,500 km of potentially navigable waterways and its strategic location on key international maritime trade routes. It also aims at transforming the existing ports into modern world-class ports and integrate the development of the ports, industrial clusters and hinterland and efficient evacuation systems through road, rail, inland and coastal waterways.

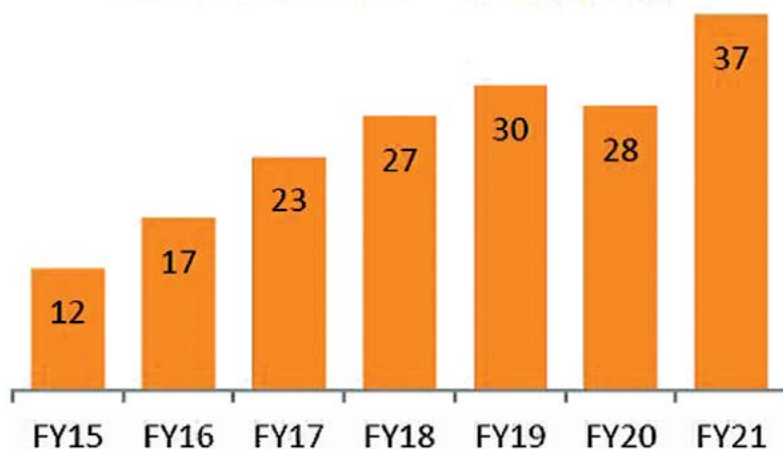
It entails investing Rs.8,50,000 crores to set up new mega ports, modernizing existing ports, developing 14 Coastal Economic Zones (CEZs) and Coastal Economic Units, enhancing port connectivity via road, rail, multi-modal logistics parks, pipelines and waterways and promoting coastal community development, with the aim of boosting merchandise exports by US\$110 billion and generating around 1 crore direct and indirect jobs.

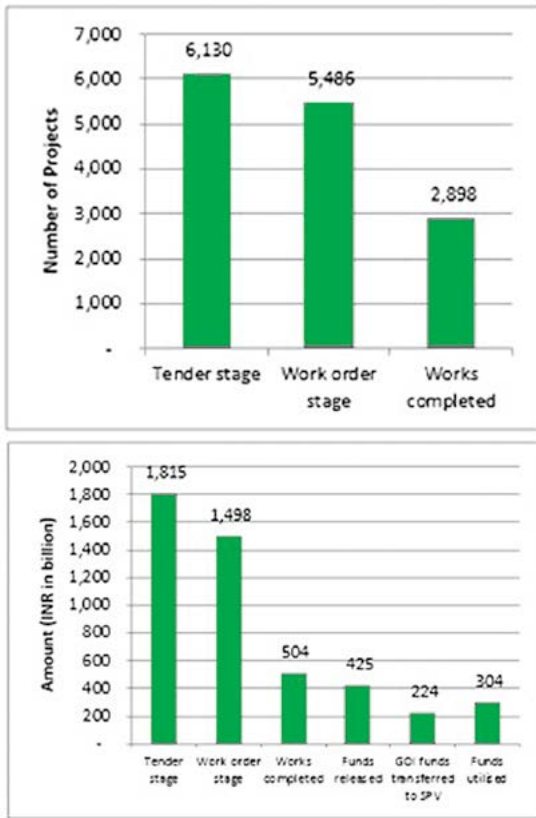
As of August 2021, 172 projects out of the 802 sanctioned projects have been completed and the remaining 632 are under implementation.

UDAN

Launched in 2017, this scheme is aimed at enhancing connectivity to remote and regional areas and making air travel affordable. Also known as the regional connectivity scheme (RCS) it seeks to improve air connectivity to tier-2 and tier-3 cities through the revival of unused and underused airports.

Road Construction Per Day (kms)





Indian Railways is on its way to deliver 58 supercritical as well as 68 critical projects worth more than Rs 1,15,000 crore in the next few years.

Under this, nearly half of the seats in Udan flights are offered at subsidised fares and the participating carriers are provided with a certain amount of viability gap funding (VGF) – an amount shared between the Centre and the concerned states. This will run for 10 years and can be extended thereafter.

Only 403 of the 948 routes awarded under UDAN scheme were operational—connecting 65 airports, eight heliports and two water aerodromes.

projects worth more than Rs 1,15,000 crore in the next few years on a mission mode. As many as 29 supercritical projects of total length 1,044 km costing Rs 11,588 crore got commissioned in the last year.

IR has electrified 45,881 route kilometers (RKM) which is about 71% of the total broad-gauge network (64,689 RKM, including Konkan Railway) by 31st March 2021. It is planned to electrify all routes by 2024.

The country's first Mumbai-Ahmedabad high-speed bullet train project is yet to be completed, but the Ministry has decided to proceed ahead with seven new rail corridor projects, including one between New Delhi and Ayodhya.

In 2020-21 budget, Railways have been allotted a total capital expenditure outlay of Rs 2.15 lakh crore.

Railways

Indian Railways (IR) under single management is among the world's largest rail networks, and its network is spread over 67,956 kms with 13,169 passenger trains and 8,479 freight trains transporting 2.3 crore travellers and 30 lakh tonnes (MT) of freight daily from 7,349 stations.

IR has prepared a National Rail Plan (NRP) for India – 2030 to create a 'future ready' railway system. The objective is to create capacity ahead of demand, which in turn would also cater to future growth in demand right up to 2050 and also increase the modal share of Railways to 45% in freight traffic and to continue to sustain it. To achieve this, all possible financial models including Public-Private Partnership (PPP) are being considered.

IR is on its way to deliver 58 supercritical as well as 68 critical

Gati Shakti Yojana

Many of the infrastructure projects get delayed due to a lack of coordination between different government departments leading to inconvenience and wasteful expenditure.

To address this issue, GoI announced PM Gati Shakti Yojana. The mega plan incorporates all infrastructure initiatives — Bharatmala, Sagarmala, UDAN, inland waterways and dry/land ports — of various ministries and state governments and brings together 16 key central ministries, including railways, roads and highways, petroleum and gas, power, telecom, shipping and aviation, under one digital platform for integrated planning and coordinated implementation.

If the proposed roadmap is implemented on time, the sector will become one of the most promising ones for the Indian economy.



DIGITAL BANKING SECURITY

ATM and Debit Cards

One Friday morning, grandpa called out to Shraavan and Gita. “Children, I’m going out for a walk in the park. Would you join me?”

“Where else are we going Grandpa? You’re wearing nice clothes.” Gita asked.

Grandpa smiled. “Planning to visit my friend Krishnan.”

Shraavan cheered up. “I’ll come. He cooks well. He always offers very tasty sweets and snacks.”

Gita added. “Yes. It’s a long time since we visited him. He lives all alone in his big flat. He must feel very lonely.”

Grandpa nodded. “He called me because he needs help. He is not able to use his ATM card. Let’s go and help him.”

Mr. Krishnan was busy in the kitchen preparing sweets when his mobile phone rang.

“Hello!” Holding the phone with his left hand he continued to stir the sweet dish with his right.

A girl spoke politely, “Sir, we are calling from the bank. Your ATM card will get deactivated today unless you confirm your

details. This is very urgent.”

Mr. Krishnan nodded. “Which bank are you calling from? I have two cards – one from SBI and another from Canara Bank. I got a new card from SBI, but it is not working.”

The girl answered. “We are calling from SBI. We’ll help you activate the card. Just read out your card number.”

Mr. Krishnan switched off the gas. He hurried to the bedroom to take out his card. He read out the number over the phone. The girl at the other end repeated the number to confirm.

“Sir please give me the expiry date and CVV number.”

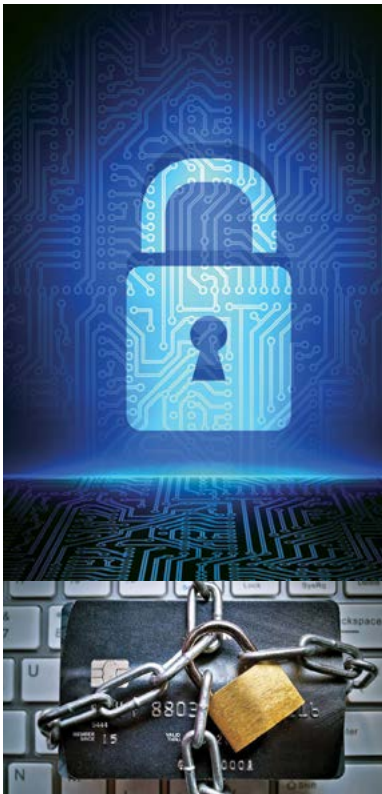
“What?”

“Sir, the month and year will be printed on the front side of the card.”

Mr. Krishnan sighed as he fumbled with the card. “Yes. Here it is. 12/24”

“Good. Now tell us the three-digit number on the reverse. That is the CVV.”

Mr. Krishnan was nervous as he fumbled and traced the reverse of the card.





Taking the electronic data from the card is called skimming. They can then create a duplicate card and use it.

He read out the number. “749.”
“Ok sir. Just wait while we activate your card. You will get an OTP on your mobile.”

There was a ping on his mobile notifying a new message. But before Krishnan could read it, the message disappeared. “Sir, you’d have got an OTP on your phone. Give us the number quickly.”

Mr. Krishnan fumbled again. “I don’t know where the message is – SMS or on WA.” Mr. Krishnan was nervous. He was looking for the message when the doorbell rang.

“Thank God you have come.” He greeted grandpa and the children with a smile. “The bank people were on the phone trying to activate the card.”

Just then the phone rang again. The girl spoke sharply. “Sir, we couldn’t activate your card because you did not give us the OTP. This is the last time we’ll try to help. Otherwise, your card will get deactivated.”

“No. You activate now. I’ll give the number.” Mr. Krishnan smiled confidently.

Mr. Krishnan whispered to Grandpa, “They’ll activate now. I just have to give the OTP.”

Grandpa rushed to his side. “Wait! Bank does not ask for OTP. Give me the phone. I’ll speak to them.” Grandpa took the phone from him. The girl spoke harshly. “Sir, you’ll get the OTP now. Give me the number quickly.”

Grandpa saw the message. The OTP was for a debit of Rs 20,000 as payment to some merchant outlet.

“Who are you? You are not from the bank!! Trying to debit our account?” He shouted.

The girl cut the call.

Grandpa showed the message to

Mr. Krishnan. “If you had given the OTP, they would have taken away Rs 20,000/- from your account.”

Mr. Krishnan slumped down on the sofa. “How could they cheat an old man like me? How can people be so mean?”

He was in a state of shock.

“Grandpa, please drink some water.” Gita offered a glass of water to Mr. Krishnan.

Mr. Krishnan’s hands shook as he lifted the glass to drink.

“The girl spoke so well and offered to help. She sounded like a bank officer.” Grandpa was scrolling through Mr. Krishnan’s messages.

“Did you know that the previous OTP was for a debit of Rs 20,000?”

“Oh no. I couldn’t find the message. Thank God, you came at the right time. Otherwise, I would have lost so much money.” Mr. Krishnan went pale.

“Bank people never ask for card number, CVV, PIN or OTP. Have you not noticed the caution messages that the banks send?”

Mr. Krishnan nodded. “I remember seeing some message. I ignored it as I ignore so many other messages.”

“What should we do now about this fraud attempt? Should I complain to the bank?” Mr. Krishnan asked grandpa.

“There is no need as we stopped engaging with the fraud caller. If you had given the OTP, we cannot claim the amount from the bank. Banks have already cautioned customers not to share OTP with anyone. You report this number as fraud and block it in the phone. This will help the phone network identify this number as scam and





Digital Security Tip ATM / Debit / Credit card

Bank People Never Ask For Card Number, PIN, CVV Or OTP. Never Share The Card Details Or OTP With Anyone Over Phone Or In Person.

Do Not Share The ATM/Debit Card Pin With Anyone. Enter It Yourself At The ATM Or At Merchant Outlets.

Do Not Write Down The ATM Pin. Do Not Use Obvious Numbers Like Birthday Wedding Day As PIN. Fraudsters Might Guess Your PIN.

Keep Your ATM/Debit Card Safe. Do Not Let It Out Of Your Sight When You Give The Card For Payment At Merchant Outlets Or Restaurants.

warn others. Thank God, no amount was debited. Now, you don't have to worry. Just be careful next time." Grandpa pacified Mr. Krishnan.

Here are some security tips about safe banking with ATM/Debit cards. Shraavan and Gita read these tips aloud for Mr. Krishnan.

"Grandpa, you say we must not let the card out of our sight. At restaurants, sometimes the waiter takes the card to the front desk to swipe."

"You must ask the waiter to bring the card machine to you. Or you go with him and enter your PIN details. Otherwise, they could skim your card details."

"What do you mean by skim?" Shraavan asked.

"Taking the electronic data from the card – that is called skimming. They can then create a duplicate card and use it."

Mr. Krishnan sighed. "It is all so scary. Now what do I do with my debit card? I got this new card last week. I didn't get the PIN number. My friend asked me to try the PIN of the old card. I tried the old PIN. It didn't work."

"Show me the letter you received along with the card," Grandpa asked him. Mr. Krishnan proudly held out the letter. "You see, I keep everything safe."

Grandpa smiled. "You must also learn to keep your bank account and card details safe. See, this letter says that you can choose a new PIN through internet banking, phone banking or ATM. Now I'll help you choose a new PIN through internet banking. Then you can go to the ATM, use the new PIN and activate the card."

"Oh. Here's my internet user id and password." Mr. Krishnan gave him a small notebook with some scribbles on it. Grandpa shook his

head. "Please don't share your User ID and password with anyone. This will become a habit. Learn to use it yourself."

"Shraavan, can you please bring the laptop from the bedroom?" Mr. Krishnan's voice was low.

"You see, I am very slow in handling computers."

"That is ok. You can learn. All of us found it difficult in the beginning." Grandpa assured him and guided him to login and choose a PIN for his card.

"Can we try using the card? The ATM is just two blocks away." Mr. Krishnan asked.

"I'll go with you." Gita offered. "I know how to use ATM card."

"I'll also come." Shraavan joined. They came back in five minutes. Mr. Krishnan was smiling. "These children are so smart. They helped me withdraw cash from the ATM."

"Hope you didn't give your PIN to them!" Grandpa laughed.

"No. I did it all by myself. They just guided me." Mr. Krishnan smiled again.

"Oh God. I forgot." He raised his voice. "Now what??" Grandpa was anxious. "I was so stressed after the phone call that I forgot to offer you sweets and snacks. I prepared everything fresh this morning."

"No problem, Grandpa. We can celebrate and enjoy them now. We're ready." Shraavan clapped his hands. Mr. Krishnan brought a tray of sweets, snacks and hot coffee.

Shraavan and Gita had a go at the delicacies. Grandpa sipped the coffee, relishing its flavour.

Mr. Krishnan announced, "I must warn my friends. Many of them, like me, are not very savvy with digital banking."

"Yes. Do share your story and caution others." Grandpa nodded.




The Year that was



2021



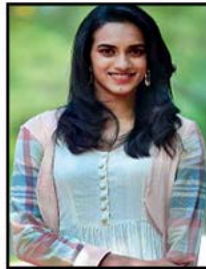
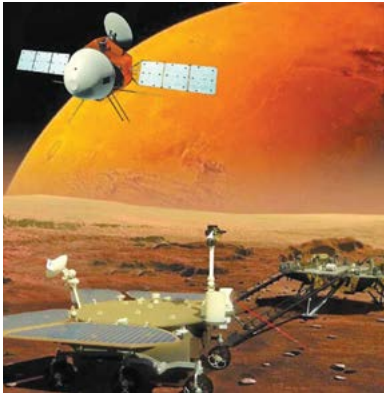
1. What was the theme of 15th India Digital Summit 2021 (IDS 2021), virtually organized by Internet & Mobile Association of India (IAMAI) in January 2021?
2. Where was the 51st International Film Festival of India (IFFI) held?
3. Which metropolitan region will be the first to avail the service of India's first indigenous 'Driverless Metro Car'?
4. What is Google's most searched-for personality in India in 2021?
5. Which country signed an MoU with Indian Government to boost cooperation in Information & Communication Technology in January 2021?
6. In January 2021, Padma awardee Dr V Shanta passed away. She was India's renowned _____.
7. How many countries are there in the G20?
8. Who became 100th prime minister of Japan? 
9. When was the last Olympic gold medal won by the Indian Hockey Team?
10. What was the theme of the 4th edition of One Planet Summit (OPS) 2021 virtually organised by France?





11. Name the huge container ship that was wedged across the Suez Canal, blocking hundreds of other vessels.
12. Three spacecraft arrived at Mars in February 2021. But which of them started orbiting the Red Planet first?
13. Which country will chair the UNSC – Counter Terrorism Committee for 2022?

Guess the sports stars for Q.14 to Q. 16



14. Who has been appointed as BWF's Athletes Commission Member?



15. Which female Paralympian has won the honour of 'Best Female Debut' at the 2021 Paralympic Sport Awards?

16. Who has been selected for the prestigious Lifetime Achievement Award for 2021 by the Badminton World Federation Council?

17. Name the currency that is the most famous of its kind and is now legal in El Salvador?

18. Which is the first site of the ancient Indus Valley Civilisation (IVC) in India to get the UNESCO world heritage site tag?

19. Paxlovid, which was seen in the news recently, is the first authorised pill against which disease?

20. Ngozi Okonjo-Iweala made history in March by becoming the first African and the first woman to serve as Director-General of an inter-governmental organisation. Which organisation is it?

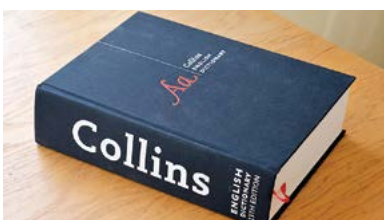
21. Which space agency had launched Yusaku Maezawa, the first private passenger to the international space station, recently?

22. Catherine Russell, who has been seen in the news recently, is the new head of which global institution?

23. Which country won the Davis Cup title in 2021?

24. 'Ciprian Foias Prize' is associated with which field?

25. What is the 'word of the year 2021' as per Collins Dictionary?



See Answers on page 59





A REFRESHER QUIZ

Lord Rama's rule, Ramarajya, is a benchmark for governance even today.

This gives in a nutshell all that we have seen until now. In case you've missed the previous editions of this series, this might be a good place to start!

Question: Why is it important to know the law?

Answer: Law is a part of our everyday life and helps us protect our life and our property.

Q: Did law exist in India before the modern era?

A: Yes! Exemplary governance existed in our nation much before modern India and this was because of a robust system of rules and delivery of justice. Lord Rama's rule, *Ramarajya*, is a benchmark for governance even today.

Q: What are the different areas/fields of law in India today?

A: Constitutional law, civil law, criminal law, company law, international law and environmental law.

Q: What is constitutional law?

A: The law relating to the provisions of the Constitution of India and the issues or disputes in connection with its provisions.

Q: What is the Constitution of India?

A: It is the 'supreme law of the land' through which the people of India resolved to constitute India into a 'Sovereign Democratic Republic' nation. (The words 'Socialist,' 'Secular' and 'Integrity,' were added to the Preamble through the 42nd Amendment of the Constitution in 1976, during Emergency.)

Q: What is the purpose of constitutional law?

A: Some main functions:
Clear distribution of authority between the legislature, executive and the judiciary;
Protection of citizens in case of violation of rights or arbitrary exercise of power by the state;

One can move the Supreme Court for the enforcement of fundamental rights.

Ensuring legal validity of laws passed by the parliament.

19 and 21 are termed the 'golden triangle' of the Indian Constitution.

Q: What is the preamble? Is it part of the Constitution?

A: It reflects the general intent and purpose for which the provisions are made in the Constitution. In the landmark case of *Kesavananda Bharati v. State of Kerala*, the Hon'ble Supreme Court of India held that Preamble is indeed a part of the Constitution and can be amended by following due procedure.

Q: What are fundamental rights?

A: Rights necessary to protect citizens against arbitrary misuse of power. They are powers without which a person may not be able to attain complete intellectual, social and moral status.

Q: What are some of the fundamental rights?

A: Equality under law and equal protection (Articles 14 - 18), right to freedom (Arts. 19 - 22); and right to life (Art. 21). Articles 14,

Q: What happens when fundamental rights are violated?

A: One can move the Supreme Court for the enforcement of fundamental rights. Under Art. 32, the Supreme Court can issue directions, orders or 'writs' for the enforcement of any of these rights.

Q: What are writs?

A: Written orders from the Supreme Court (under Art. 32) or High Courts (under Art. 226) that command remedies against the violation of fundamental rights. They are majorly classified into *habeas corpus*, *mandamus*, *prohibition*, *quo warranto* and *certiorari*.

Q: What is public interest litigation (PIL)?

A: Where the rights or interests of the public, or a particular class of the public, have been affected, a writ petition may be filed by any person on their behalf before the court.

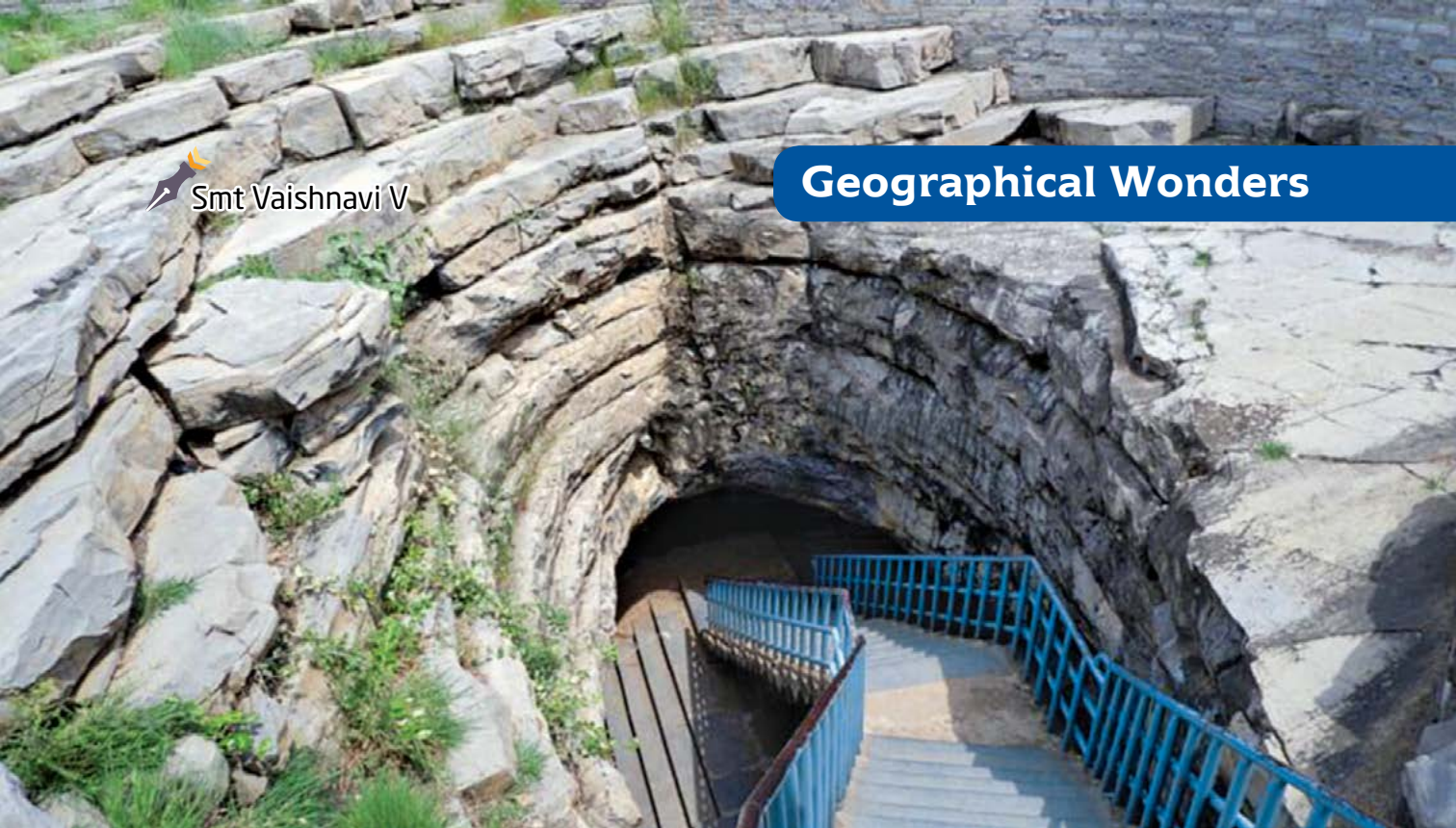
ANSWERS
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1. Aatmanirbhar Bharat – Start of New Decade
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Belum Caves

– A Limestone Landscape

Belum is part of a larger complex of caves carved out of the limestone deposits in the Erramalai region.

Aditi and Pranav visited their aunt in Hyderabad during their December holidays and were excited to meet their cousin Tara who had come from the United States. Tara gifted them a travel diary and stamp book this time.

They both loved it and expressed how lucky Tara was to be in America and visit so many beautiful places. But Tara said, “America has lovely places but India has far more historically and culturally rich places to explore. India is a land of architectural and natural wonders. I’ll take you to the Belum caves now. You should visit interesting places in India, make a travel diary and share with others.”

Travel Account of Aditi & Pranav #001

Place: Belum Caves December 2021

Location: Near Belum village 3 km from Kolimigundla of Kurnool District, Andhra Pradesh. 323 km from Hyderabad.

Belum is part of a larger complex of caves carved out of the limestone deposits in the Erramalai region. Other caves include the Billasurgam, Sanyasula, Yaganti, Yerrajari and Muchchatla Chintamanu.

It is the 2nd longest cave in the subcontinent - 3,229 m, renowned for their **speleothem structures** such as stalactite and stalagmite formations.



DO YOU KNOW

Caves are called **Guhalu** in Telugu and **Gavi** in the local language.

Belum - second natural cave after Krem Liat Prah caves in Meghalaya.

Speleology – Study of caves

Stalactite - a deposit of calcium carbonate resembling an ice-cone hanging from the roof or sides of a cave.

Stalagmite - an inverted stalactite formed on the floor.



Path to the caves

They were formed when the underground river washed away the soft limestone from the surrounding hard stones. The walls of the caves have deep marks from erosion caused by the river. Looking closely, one can see deposits of quartz within the caves.

The discovery

British surveyor Robert Bruce Foote stumbled upon the cave in 1884. Till 1983, the caves were used as garbage dumps. German speleologist Herbert Gerbauer along with Indian geologists started a detailed exploration and mapping, while the corporation and local people helped them clear the cave. Vessels dating back to 4500 BC and mortar and pestle used for grinding medicines indicate the antiquity of the caves.



Sink hole



Simhadwaram



Patalganga

What we saw

1. 40-foot Buddha statue
2. Three sink holes
3. Stalactites in the shape of
 - Head of a lion with an arch like formation – **Simhadwaram**
 - Lingams - **Kotilingalu Chamber**
 - A banyan tree - **Voodalamari**
 - Hoods of thousands of cobras - **Thousand Hoods**
4. **Patalganga** – A natural waterfall, 150 feet below the ground appears at one point, flowing over slippery rocks, before disappearing into the depths of the earth.
5. **Dhyana Mandir** - A bed with pillow like structure must have given many monks a naturally formed stone recliner. The local legend says that in ancient times the caves were home to many sages.
6. **Saptasvarala Guha** - formations produce musical sounds when struck with a wooden stick or knuckles.

Useful Tips

1. The nearest rail-head to reach Belum Caves is Tadipatri, 30 kms away.
2. Best time to visit is winter.
3. Wear right kind of clothes and shoes to go deep inside a cave.
4. Carry enough water and towel as it gets very humid.

Look out for this page for more such exciting wonders of our Bharat.





Smt Krupa Murugesan

LIVING NATURALLY



We should understand that there was a strong logic around many of our ancient practices which stand the test of time.

A sound body leads to a sound mind. Only when our body is healthy, can we study or work efficiently and feel better. Imagine, if you are unwell, will you even have the thought or heart to go to school? Will you be able to play with your friends?

When you are sick, you will not be able to enjoy the activities which you will otherwise like to? How do we get a sound body and health? This has been the question from time immemorial.

The Mother Earth that sustains us, also has the intrinsic capability and all necessary ingredients to help maintain and repair our bodies. Remember, billions of animals and birds also live on this Earth. They do not fall ill as much as human beings as they lead a life strictly in sync with Mother Earth. Even if they do fall ill, they repair their bodies by following simple laws of nature!

Nowadays, caught in this world of consumerism, we all believe the advertisements the most. If a food product or a practice is labelled as healthy by an advertisement, we follow it without thinking twice.

Unfortunately, that is not correct. We as humans have been endowed with the intellect and power of questioning. We should find out if the claims of the advertisement are true or not. For

e.g., take toothpaste. Though human beings have existed on this planet for very many years, the toothpaste in its current collapsible tube was introduced to us only in 1892, i.e., only 130 years ago.

Prior to that all civilizations used locally available herbs to maintain their oral hygiene.

Surprisingly, when toothpastes were first introduced in India in 1900s, ancient practices followed in India such as use of charcoal and neem stick were labelled as unhealthy. But now, we see toothpastes claim to be effective products for healthy teeth because they contain charcoal and neem.

We should understand that there was a strong logic around many of our ancient practices which stand the test of time. How do we get to learn ancient wisdom? There comes to our rescue, the Vedas – to be more precise Ayurveda, which specifically deals with in-depth knowledge on human anatomy and health, akin to an ‘Operating manual’. We need not go in search of ways to lead a healthy life. It is essential to follow a wellness practice grounded on a healthy lifestyle than finding solutions for problems once they arise.

Soon we will be sharing practical and feasible tips with appropriate evidences in subsequent issues.





Spotlight of the month

NEENA GUPTA

Neena Gupta, a 37-year-old professor at the Indian Statistical Institute (ISI) has won the Ramanujan Prize (2021) for her work on **affine Algebraic Geometry and Commutative Algebra**. She is the third woman ever; second Indian woman and the fourth Indian to win this prize. The ICTP Ramanujan Prize awardee is entitled to a \$15,000 cash award and is invited to ICTP for the award felicitation and to deliver a lecture.

Established in 2004 in the memory of mathematician Srinivasa Ramanujan who made an immense contribution to analytical theory of numbers and elliptic functions, the

prize is given to mathematicians under the age of 45 for outstanding work in the field. It was originally instituted by the International Centre for Theoretical Physics (ICTP). Now, it has also gained the support of the International Mathematical Union (IMU) and the Department of Science and Technology of the Government of India (DST).


Neena Gupta was born and brought up in Kolkata. She did her B.Sc Maths at Bethune College and appeared for the ISI entrance test with the guidance of her peers and professors. “Looking back, I can say that there were hardly any girls who were vying for the same course, but at that time, it did not bother me,” she says. She excelled in her PG and went on to do her PhD in ISI, Kolkata.

Neena came across the Zariski cancellation problem when she was doing her Ph.D and although her professors advised her to stop wasting time on it, the unsolved problem continued to haunt her. She found a workable solution for this in 2012 and went on to win the Indian National Science Academy’s Medal for Young Scientists in 2014. She has also expressed her concerns towards the lack of confidence when it comes to women in the field of maths.

“Maths is a very logical subject, nothing to be afraid of,” says the young mathematician.




मेरी सरकार



Math Prof Neena Gupta Does India Proud!

Receives
Prestigious
Ramanujan Prize



- Exemplary work in geometry & commutative algebra
- Bagged the Shanti Swarup Bhatnagar Prize for science & technology in 2019

JANUARY 2022

Source: Ministry of Science & Technology



Kazi Nazrul Islam

The Bard of the Motherland and the Divine Mother

Nazrul forms the league of five great poet-song writer-composers who have expressed the emotions, the struggles and celebrations of Bharatavarsha's history, politics, religion and her civilisation.

*“Bhārata-lakṣmī! We've churned the ocean of woe;
Come, O Mother, come back now!
Once You did sink into the abyss,
Alas, O Mother! Ne'er to return since.”*

With these words, Kazi Nazrul Islam (1899 – 1976) had expressed his lamentations for his beloved Motherland Bharatavarsha, whose lost glorious avatar he named Bhārata-lakṣmī, following in the footsteps of his contemporary Bengali poet-songwriter Atul Prasad Sen. Alongside Rabindranath Tagore, Dwijendra Lal Roy, Rajanikanta Sen, and Atul Prasad, Nazrul forms the league of five great poet-songwriter-composers who have expressed the emotions, the struggles and celebrations of

Bharatavarsha's history, politics, religion and her civilisation.

Having come from very humble origins, Nazrul had first-hand experience of the material and moral downfall of his Motherland. He was born in a little village in the Burdwan district of undivided Bengal under the British Raj. From very early on, he showed great aptitude in composing poetry and songs, and worked for a folk theatrical group to make ends meet. He even fought in the World War I as a soldier in the British Indian Army. These experiences

Nazrul used to frequently employ imageries, symbols, and motifs from the vast repository of stories and legends in the Itihāsa-Purāna literature.

acquainted him with the world of politics at close quarters, and he acquired a very pragmatic approach to the conditions of human existence. And yet, he could never deny the influence of indigenous spirituality of his Bengali roots – resulting in simultaneous poetic and musical compositions on themes both political and religious. On the one hand, he celebrated the revolutionary spirit of the Bengali youth who sacrificed everything for the sake of Bharat Mata’s freedom and were being imprisoned in British jails or exiled in soul-crushing cells of the Andaman Islands in songs like

“কারার ঐ লটাইকপাট ভঙেগে ফলে”

“*kārār oi louho-kopāt bheṅge phel*”

(Translation: “Tear down the iron gates of the prison”);

and on the other hand, he sang paeans to the heroes and symbols of the Bhāratīya civilisation in sublime religious lyrics like

“মন জপ নাম শরীরঘূপতরাম”

“*mono jopo nām, sri raghupati rām*”

(Translation: “O Mind! Chant the name of Sri Ram, the Prince of the Raghu clan”).

Notably, Nazrul used to frequently employ imageries, symbols and motifs from the vast repository of stories and legends in the *Itihāsa-Purāṇa* literature. This is evident from the greater part of his compositions in poetry and music, including in the patriotic number

“দুঃখ সাগর মন্থন শেষে ভারতলক্ষ্মী আয়
মা আয়”

“*duḥkho-sāgoro monthono śeṣ, bhāroto-lokkhi āye mā āye*” with which we started this brief account. In that song we see a mention of

events from the churning of the ocean that gave rise to the world-consuming *halāhala* poison that Bhagavān Shiva had to digest and *amṛta*, the divine nectar that bestows eternal life to its partaker. In the subsequent stanzas of that song, Nazrul goes on to speak of these puranic events in the following idiom:

“The churning spouted only the poison of Halāhala;

There’s no Shiva here – who’d swallow it now?

Bring thy flagon of *amṛta* – the poison’s burning us down!

Thy *aanchal* doesn’t flutter in the green fields of golden crops –

The mother’s breast, the cow’s milk,

And the river’s waters have all dried up.

I seek not salvation, Mother! I seek to live and thrive –

With a lifetime undiminished on this earth;

I seek life, I seek food in hunger, in generous light and air!”

Having observed, at close quarters, the wretched conditions of his poor countrymen who were either dying of hunger, malnourishment, and calamities like frequent plagues, droughts, and floods, or were languishing in the British jails, Nazrul no doubt sought to be blessed with a life of abundance, of health, of a clean environment from the Motherland who he worshipped and held in high regard as a bestower of nourishment in body, mind and soul. **To dream of a New India who has surpassed her ancient greatness in spiritual as well as material progress and to sing her glory – this is a dominant theme in Nazrul’s patriotic-nationalistic lyrics, such as in the**



The corpus of Nazrul's songs on Shakta devotion is matchless both in his times as well as after.



songs “*duḥkho-śāgoro monthono śeṣ, bhāroto-lokhi āye mā āye*”

or

“স্বপনে দেখেছি ভারত-জননী তুই যনে
রাজরাজশেবরী

“*śopone dekhechi bhāroto jononī tui jeno rāj-rājeśworī*”

(Translation: “I have dreamt that You, O Mother Bhārat! Were a monarch among monarchs!”).

It should be noted that Nazrul is the composer of a large body of *Shyamasangeet*, a genre of Bangla devotional songs dedicated to the Devi, the Divine Mother, in either of Her two most popular manifestations in Bengal as Kali or Durga/Uma. In this it is hardly possible to distinguish him from the lineage of the great early modern composers of *Shyamasangeet* songs, such as Ram Prasad Sen, Kamalakanta Bhattacharya, and Dasharathi Ray, all of whom are also regarded as *Sādhaka-s* par excellence in the Bengali Shakta tradition. The corpus of Nazrul's songs on Shakta devotion is matchless both in his times as well as after. It is also said that he himself was a great devotee of the Divine Mother, whose shrine he kept and regularly prayed to in his home. Some of his more popular *Shyamasangeet* songs are

“শ্যামা নামেরে লাগল আগুন আমার দেহে-
ধূপকাঠিতে”

“*shyama namer laglo agun amar deho-dhoop-kathite*”,

“কালো ময়েরে পায়রে তলায় দেখে যা
আলোর নাচন”

“*kalo meyer payer tolay dekhe ja alor nachon*”,

“এলো রো এলো ঐ রণ-রঙগণী”

“*elo re elo oi rono-rongini*”, to mention a few.

In his final days, he became a victim of crumbling physical and mental health as well as of petty identity politics of Bangladesh, whose authorities forced him and his family to move base from Calcutta to Dhaka, the new capital of the new-born Islamic nation-state that seceded from Pakistan. His health had started deteriorating since the early 1950s, and at the time it was only Shyama Prasad Mukhopadhyay, the founder of the Bharatiya Jana Sangh and the youngest Vice-Chancellor of the University of Calcutta, who came forward to help him get out of a dire financial distress and restore his health.

Nazrul died a tragic, lonely death; but he lives on in the hearts and voices of those who continue to sing his patriotic and devotional songs to this day; songs that are dedicated to the Mother who is at once the country as well as the mother of the Universe.



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VEGETABLES / FRUITS**



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