

# PRAJYA

MONTHLY NEWS MAGAZINE FOR CHILDREN

ISSUE 09 May 2022 Rs.85/-

## 100% Electrification of Konkan Railway



A Tribute to the  
Great Freedom Fighter

# MANGAL PANDEY

MARTYDOM DAY

*8<sup>th</sup> April*

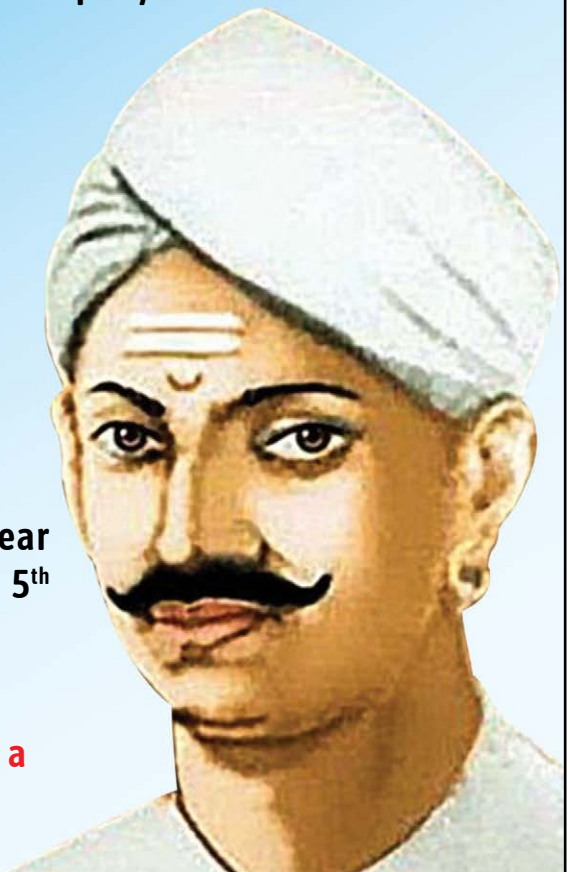
**Mangal Pandey, the Great Indian Freedom Fighter who was martyred on April 8, 1857 - is famous for starting the Indian rebellion, popularly known as "First War of Independence"**

**He was a sepoy (infantryman) in the 34th Bengal Native Infantry (BNI) regiment of the British East India Company.**



**He Joined the Bengal Army in the year 1849 and was a private soldier in the 5<sup>th</sup> company of the regiment**

**In 1984, the Indian government issued a postage stamp to remember him.**





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**Editorial Board:**

Smt Mali Nandakumar  
Educational Consultant

Shri Nandakumar V  
Educational Consultant

Smt Nandhini S  
Principal | D.A.V. Sec School, Mogappair

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Col Shashidhar M V (Retd)  
Shri Sivakumar R  
Shri Sridhar P  
Shri Subramanian S  
Shri Vikas Arya

**Technical Editor :**

Shri Guhaprasath Subramanian

**Creative Design & Printed by :**

Shri Ram Manohar R  
Sri Hari Digital Ventures P Ltd.  
AVG Graphics

COMMENTS  
&

SUGGESTIONS

prajya.magazine@davchennai.org

अपि शाकं पचानस्य सुखं वै मघवन गृहे ।

अर्जितं स्वेन वीर्येण न व्यपाश्रित्य कञ्चन ॥:

**(Rough translation:** O Maghvan, even the person who cooks for his food only little leaves earned through his own efforts and not having to depend on others is a happy person)

This sloka from Vana Parva of The Mahabharata talks about self-reliance. The joy of eating the fruit of one's own labour is greater than all the luxury received as a favour from another person.

This is true of nations as much as individuals. Our land has neither lacked resources nor intellectual potential. Despite all the challenges it faced over a millennium, its spirit has remained intact. What we have been witnessing in recent times is the resurgent nation that asserts its capabilities wanting to regain its former glory. One definite step is the **Atmanirbhar Bharat** initiative. The increase in exports in defence, agriculture and many other fields and the growing number of Indian patents, pushing India to a higher position on the global innovation index, the launch of EPIC foundation; the setting up of India Semiconductor Mission - these are clear indications of a nation breaking the shackles of dependence. It is forging ahead as a regional force to reckon with. It is no more the 'third world country' it once was. Be a part of the same!

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://bit.ly/Prajya>

Happy Reading !

Watch out for the Monthly Prajya Quiz online

Visit <http://davchennai.org/publications/prajya-news-magazine/>



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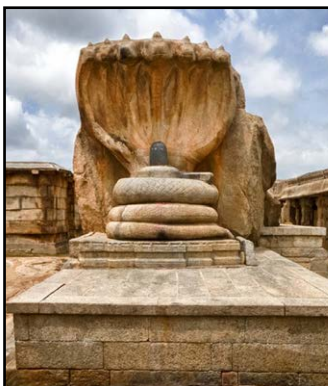
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# Cross-Border Train Services and RuPay System in NEPAL

India has been a firm companion in Nepal's journey of peace, prosperity and development.

**O**n 2nd April PM Modi and Nepalese PM Sher Bahadur Deuba jointly inaugurated the cross-border passenger train services and RuPay payment system in Nepal. They flagged off the 35-kilometer long cross-border passenger train services between Jainagar (Bihar) and Kurtha in Nepal.

**RuPay** system was launched by the National Payments Corporation of India (NPCI) on 26th March 2012. It is a domestic, open and multilateral system of payments. In a market that was dominated by foreign companies such as Mastercard and Visa, RuPay has become India's first card payment network. The three other countries that have the RuPay card are Bhutan, Singapore and the United Arab Emirates.

They also jointly inaugurated the Solu Corridor 132 KV Power transmission line and substation in Nepal built under GOI's Line of Credit.

**Line of Credit** – an arrangement between a financial institution—usually a bank - and a client that establishes the maximum loan amount the customer can borrow.

The leaders held wide-ranging discussions concerning bilateral ties between both the countries. Along with the launch of RuPay card system, they also signed four Memorandums of Understanding (MoU).

India has been a firm companion in Nepal's journey of peace, prosperity and development, PM Modi said, adding that PM Deuba has played an important role in developing India-Nepal relations.





# India secures KEY LEADERSHIP POSITION in ITU

**A**parajita Sharma, a service officer of Indian Post & Telecommunication Accounts and Finance (IP&TAF) has been appointed as the vice-chairperson of the Council Standing Committee on Administration and Management of the International Telecommunications Union (ITU).

First established in 1865, ITU is an agency of the United Nations that oversees matters related to information and communication technologies. The union itself is split into 3 main parts, the Plenipotentiary Conference, the Council Standing Committee and the Secretariat.

The Plenipotentiary Conference is the most important part of ITU as it is tasked with making treaties with the 193 member countries of the UN and deciding international policies with regard to telecommunications and information technology.

The Council Standing Committee is the decision-making body concerned with the smooth operation of the ITU itself.



The Secretariat is in charge of providing efficient services to the member nations and also the administrative and budgetary planning of ITU. It requires that all members of the ITU follow regulations and also publishes the results of work undertaken by the ITU.

Aparajita Sharma will serve till 2024 and go on to become its chairperson in 2025. India's continued progress as a leader in the field of telecommunications has played an important role in securing this position.





# IndAus ECTA

## India, Australia sign Interim Free Trade Agreement

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**The IndAus ECTA, encompassing trade in goods and services will further cement the already deep, close and strategic relations between the two countries.**

India and Australia signed an interim free trade agreement on 2nd April 2022 in order to boost bilateral economic and trade cooperation between the two countries.

The India-Australia Economic Cooperation and Trade Agreement (IndAus ECTA) was signed by Union Minister of Commerce and Industry Shri Piyush Goyal and Australian Minister for Trade Dan Tehan in a virtual ceremony in the presence of PM Modi and the Australian PM Scott Morrison. Speaking on the occasion, PM Modi said that signing of the agreement was truly a watershed moment for bilateral relations between India and Australia and that there was immense potential for the respective economies to fulfil the needs of each other. On the basis of this agreement, both the countries will be able to contribute in increasing

the resilience of the supply chains and the stability of the Indo-Pacific region.

PM Scott Morrison said that the signing of the agreement will facilitate bringing down the prices of Australian goods in India. It will unlock deeper cooperation in the transaction of critical minerals and rare earths which are now an area of increasing importance in India's growing manufacturing sector. Study and travel opportunities will get a boost.

The IndAus ECTA, encompassing trade in goods and services will further cement the already deep, close and strategic relations between the two countries and will significantly enhance the bilateral trade in goods and services, create new employment opportunities, raise living standards and improve the general welfare of the people of both the countries.





# INDIA

## 3<sup>rd</sup> Largest Contributor to UN Democracy Fund

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**The UNDEF supports projects that strengthen the voice of civil society, promote human rights and encourage participation of all groups in democratic processes.**

**H**ello, Members of Generation Next !!!  
You know that India is the world's largest democracy. But many of you may not be aware that India actively supports democratization efforts around the world, by being a founding partner of United Nations Democracy Fund (UNDEF).

While UN does not advocate for a specific model of government, it promotes democratic governance as a set of values and principles that should be followed for greater participation, equality, security and human development.

It is in consonance with this that the UNDEF was created by the former UN Secretary General Kofi A. Annan in 2005 as a UN General Trust Fund working directly under the Secretary General with the

guidance of the Fund's Advisory Board which is its apex body.

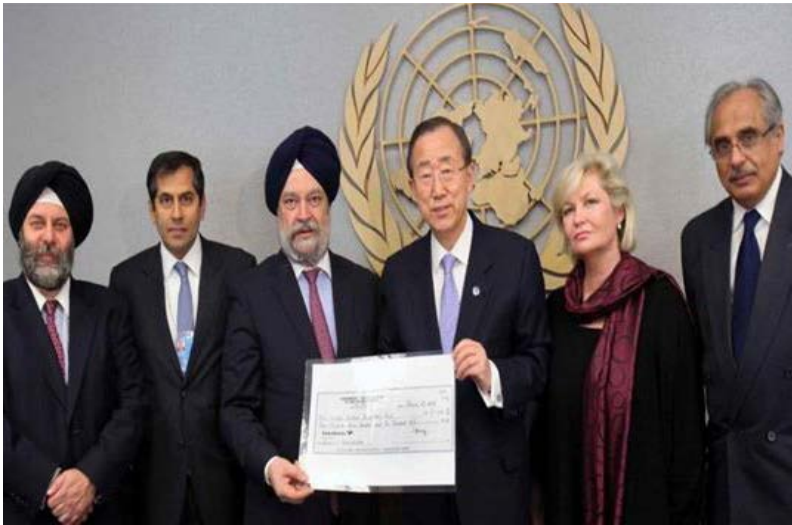
The UNDEF supports projects that strengthen the voice of civil society, promote human rights and encourage participation of all groups in democratic processes. Unlike the UN which strives to realize its goals of peace across the world by working with the governments, UNDEF works with local civil society organizations. UNDEF subsists entirely on voluntary contributions from governments.

In 10 rounds of funding so far, UNDEF has supported over 600 projects in more than 100 countries.

UNDEF projects are two years long and fall under one or more of seven main areas:

- Women's rights and empowerment / gender equality
- Community activism





“  
**India has been a long-standing member of UNDEF’s Advisory Board by virtue of continuously being among the largest donors to the Fund. During 2022, India has contributed US\$ 150,000 to UNDEF**

**In 10 rounds of funding so far, UNDEF has supported over 600 projects in more than 100 countries.**

- Rule of Law and human rights
- Youth engagement
- Strengthening civil society capacity for interaction with government
- Media and freedom of information
- Tools for knowledge

**UNDEF grants range from USD 100,000 to USD 300,000.** Project proposals are subject to a highly rigorous and competitive selection process, as UNDEF receives an average of about 2,000-3,000 proposals a year and only some 50-60 are selected. Currently, for example, UNDEF finances

projects to mobilize the youth for elections in Côte d'Ivoire, to engage men in promoting gender equality in Palestine, and to build a platform for citizen advocacy in elections in Brazil.

India has been a long-standing member of UNDEF’s Advisory Board by virtue of continuously being among the largest donors to the fund. During 2022, India has contributed USD 150,000 to UNDEF. The cumulative contribution by India to UNDEF since its inception has been more than USD 32 million. We are the 3<sup>rd</sup> largest contributor, clearly underlining our deep-rooted commitment to democratic values.







# MEA JAISHANKAR

## meets UN SECRETARY GENERAL

**India seems to be the only country the western world could rely upon to exert influence on Russia to tone down its military operations in Ukraine.**

The dynamics of a new world order now hinges on the outcomes of events in Europe and Asia. The sudden decision of U.S to withdraw from Afghanistan paving the way for Taliban rule in a war-ravaged region and the war in Ukraine - these events have left the world tottering on uncertainty. India seems to be the only country the western world could rely upon to exert influence on Russia to tone down its military operations in Ukraine.

The war could result in crippling food and fuel shortages in many parts of the world. Russia and Ukraine produce 25% of the world's wheat. Egypt depends totally on Ukrainian wheat imports and so do Turkey and parts of Middle East. 40% of gas needs of Europe is imported from Russia. Though India is fairly insulated in food and energy fronts, its

responsibility as continental and maritime power is being tested now. Countries like Egypt and Turkey are looking at India for their wheat requirements and India is well placed to help with an expected harvest of 110 million tonnes.

With this in mind external affairs minister Jaishankar held wide ranging talks with UN Secretary General Antonio Guterres regarding the war's global impact on food and energy security. They also discussed the possibility of Afghan soil being used as terrorist havens and have jointly appealed to Afghanistan to act responsibly. India had to weather multiple storms after its decision to abstain in UN general assembly vote that named Russia as the aggressor. This meeting is crucial in developing contingency plans to manage the after-effects of the conflict.

# INDIA is EGYPT'S NEW WHEAT SUPPLIER

India is the second largest producer of wheat (107.59 million tonnes annually).

### The top ten countries importing Indian wheat:

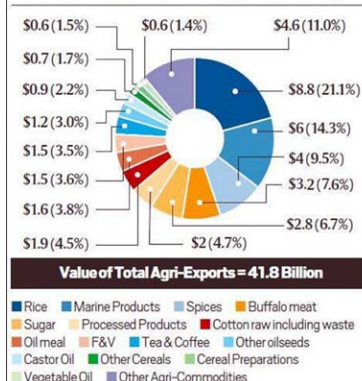
Bangladesh, Nepal, the United Arab Emirates, Sri Lanka, Yemen, Afghanistan, Qatar, Indonesia, Oman and Malaysia.

Egypt is the world's biggest importer of wheat and spends more than USD 4 billion annually.

Combined, Russia and Ukraine covered more than 70% of Egypt's imported wheat demand. Egypt is looking to import 1 million tonnes



AGRI-EXPORTS FROM INDIA (FY2020-21)



of wheat from India due to Russia-Ukraine conflict and would need 2,40,000 tonnes in April to provide subsidised bread for population of over 100 million. India is the second largest producer of wheat (107.59 million tonnes annually) with a share of around 14.14% of the world's total production in 2020.

**Major wheat growing states in India:** Uttar Pradesh, Punjab, Haryana, Madhya Pradesh, Rajasthan, Bihar and Gujarat.

# PERMISSION GRANTED TO CONDUCT *5G technology* TRIALS

On 16th March 2022 the Union Minister of State for Communications Devusinh Chauhan announced that GOI has granted permission to some of the premier telecom companies, including Bharti Airtel, Reliance Jio and Vodafone to begin testing



of 5G in India. These trials are to ensure that the technology is viable in India and that it will not disrupt aeronautical communication and already present communication infrastructure.

Upon successful testing and future implementation, the potential for 5G technology to improve coverage and connectivity across India is immense. Testing is expected to happen over the following year with regular updates being provided to the government regarding progress.





# 1.75 CRORE HOUSES BUILT under PM Awas Yojana-Gramin

PM Awas Yojana has two components PMAY-U and PMAY-G targeting urban poor and rural poor respectively.

**U**nder the PMAY-G scheme, 2.28 crore houses were sanctioned to the beneficiaries, out of which 1.75 crore houses have been completed as of 9<sup>th</sup> March 2022.

Pradhan Mantri Awas Yojana (PMAY) is a flagship mission of the GOI to provide affordable housing with basic amenities. It has two components PMAY-U and P M A Y - G targeting urban poor and rural poor respectively.



## Benefits

- Providing a pucca house to all householders living in kutchha and dilapidated houses.
- Increased monetary assistance (₹ 1.20 lakh in plains and ₹ 1.30 lakh in hilly areas) in 3 instalments.
- Construction of quality house within 12 months from the date of sanctioning to the beneficiary.
- Micro monitoring of house sanction and completion using latest IT tools and technologies.





# Japanese PM Fumio Kishida *visits* India



Japanese PM Fumio Kishida paid a two-day visit to New-Delhi on 19<sup>th</sup> and 20<sup>th</sup> of March to hold the 14<sup>th</sup> India-Japan Summit. He met PM Modi to discuss bilateral relations.

PM Kishida stated that India and Japan are linked by universal values such as freedom, democracy, human rights and the rule of law.

The visit is of strategic importance to both countries, as it focuses on a free, open and inclusive Indo-Pacific trade region and the continued progress of Act East forum concerned with developmental projects in north-eastern India.





DRDO Chairman,  
**DR. G. SATHEESH REDDY**

# L&T Constructs 7-STOREY BUILDING in record time

The Buildings Business of Larsen & Toubro has set a new record by building a seven-storey facility in 45 days. The state-of-the-art Flight Control System (FCS) Integration Facility for the Defence Research and Development Organisation (DRDO) was built using Integrated Hybrid Modular Construction Technology (IHMCT). Shri Rajnath Singh, Minister of Defence, inaugurated the building on 17th March 2022.

L&T is an Indian multinational company involved in EPC projects

(Engineering, Procurement and Construction), Hi-Tech manufacturing and services. The DRDO facility construction started on 1st February 2022 and everything including modular interiors, façade and MEP (mechanical, electrical and plumbing) was completed on schedule.

The IHMCT technique uses precast concrete elements such as floors and walls built in a controlled, weatherproof factory environment. These precast elements are combined with usual concrete

construction for faster project delivery without compromising on quality and onsite safety.

The concept and technical design for this 130,000 sq. feet facility was done by DRDO, and detailed engineering was undertaken by L&T. Teams from IIT-Madras and IIT-Roorkee conducted design checks and provided technical support.

The on-site team had to coordinate with 21 off-site locations to integrate design, structure, architecture services.

This hybrid construction technique adopted by L&T will help us increase productivity, optimise resource usage and reduce wastage.

“This facility shows that India can build anything in a short time,” praised DRDO Chairman, Dr G Satheesh Reddy.





# DigiLocker

Your documents anytime, anywhere

## A PLATFORM FOR PAPERLESS SERVICE

**This initiative is to reduce and eventually eliminate the use of physical documents and ensure easier digitization and sharing of e-documents across multiple governmental agencies.**

**D**igital India reached an important milestone with 10.5 Crore registered users actively using the platform to access official documentation. DigiLocker is a digitization service provided by the Ministry of Electronics and Information Technology (MeitY) as part of its Digital India Initiative. It provides access to authentic digital documents to the citizen's digital document wallet.

DigiLocker exists as an app for android and iOS device where users can create a cloud-based account and upon registration, access all their government issued documents, such as Aadhar Card, PAN Card, voter ID, policy documents, vehicle registration, driving licence etc.

This initiative is to reduce and eventually eliminate the use of physical documents and ensure easier digitization and sharing of e-documents across multiple governmental agencies.

### Benefits

- A centralized database for all important documents.
- Unimpeded access to documents as long as the user has an active internet connection.
- Easier authentication of documents by governmental agencies.



- Protection of documents through cryptographic encryption and signing to prevent potential misuse.
- Reduction of paper wastage and preservation of documents.
- Faster service delivery such as government benefits, financial policies etc.

Real-time verification of these documents can be performed by government agencies on request without hassle upon obtaining the consent of the user.

DigiLocker has been a monumental step towards Digital India and moving away from paper based documentation. As more users register to the platform the faster it is expected to grow, thereby ensuring efficient, consistent service to its users.





# KONKAN RAILWAY achieves 100% electrification

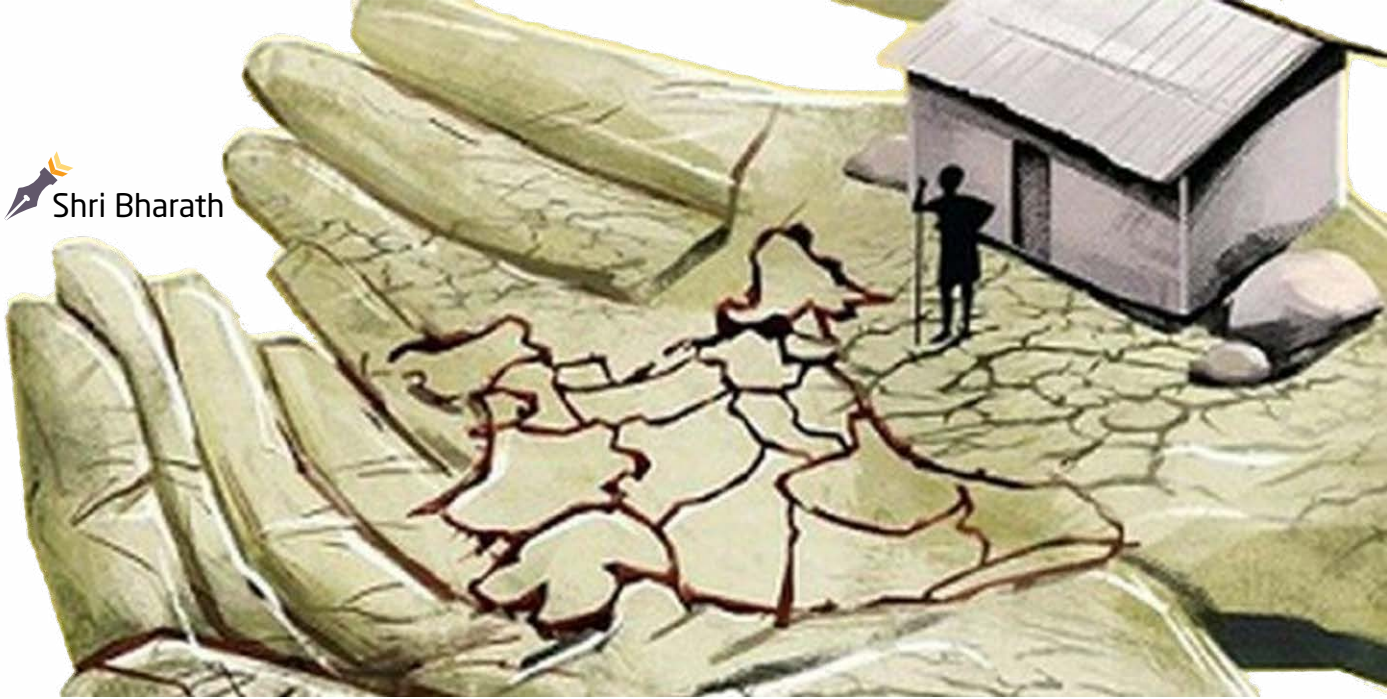


The Konkan Railway, operated by the Konkan Railway Corporation headquartered in Mumbai, oversees nearly 750 kilometres of railway lines connecting Maharashtra, Goa and Karnataka along the Konkan coast of India. Beginning in November 2015, plans with a total cost of Rs. 1,287 crores were undertaken to electrify the entirety of the route.

Despite difficult terrain and the Covid-19 pandemic, the electrification was successfully completed by the end of March 2022. This is expected to decrease fuel expenditure by more than ₹ 150 crores along with reduction in pollution and dependence on High Speed Diesel.

These savings will in turn be used to improve infrastructure and services to passengers.





# National Land Monetization Corporation

**Monetization will create new sources of revenue, unlock the potential of the unused and underused assets involving institutional investors and private players and also create capital for future asset creation.**

The Central cabinet cleared the setting up of a special purpose vehicle (SPV) called the National Land Monetization Corporation (NLMC) on 9th March 2022, in pursuance of the Budget announcement for 2021-22.

This will be a wholly owned GOI company with an authorized share capital of ₹ 5000 crores and paid-up share capital of ₹ 150 crores. This corporation will help the public sector enterprises undergoing disinvestment or closure. This will be set up by the Department of Public Enterprise and shall be under the Ministry of Finance.

NLMC shall undertake the monetization of currently unutilized or under-utilized non-core assets - surplus land and buildings of Central Public Sector Enterprises

(CPSEs) as well as other government agencies. The NITI Aayog drives the monetization of core assets.

## The Need and Objectives

Public sector companies have referred about 3400 acres of land and other non-core assets to the government. Land held by various government agencies is over 5 lakh hectares. This itself explains why the government should focus on land monetization.

Monetization will create new sources of revenue, unlock the potential of the unused and underused assets involving institutional investors and private players and also create capital for future asset creation. This revenue will help boost the economic activity and aid the government in its social development spends.

**NLMC is bound to be a game changer scaling up the economic activity in general and achieving the monetization and disinvestment targets in particular.**

With specialists having expertise in land monetization, NLMC will fast-track the process and fill the skill gap that currently exists in the government. It will own, manage, hold and monetize the land and building assets of CPSEs and also the surplus land and buildings of 100% government owned CPSEs. This SPV will also bring to the table the industry best Indian and global practices.

### **The Structure**

The chairman will be an accomplished professional. A competent Board of Directors shall guide the corporation's operations. It shall be a mix of government officials and reputed professionals from banking, construction, real estate, investment banking, law and other sectors.

It will be empowered to hire professionals from the private sector like what is being done in some specialized government companies. It will be a lean organization with limited full-time staff hired on contract basis from the market. NLMC will have the necessary flexibility in the areas of talent hiring and retention unlike many other government enterprises.

### **The flipside**

Under the Ministry of Finance there is already a Department of Investment and Public Asset Management (DIPAM). The major areas of its work are related to strategic disinvestment, minority stake sales, asset monetization and capital restructuring.

There are possibilities of overlap and hence a clash of roles between DIPAM and NLMC. There could also be turf wars between NLMC and the other CPSEs at an operational level. The government

## **DO YOU KNOW ?**

**Monetization** - the process of earning revenue from an asset.

**Authorised Share Capital** - the maximum amount of money that a company is authorized to raise in exchange for shares.

**Paid up capital** - total amount of money raised from shareholders by selling shares at the initial issuance.

**Non-core assets** - assets that are not essential for the core business operations of a company.

should proactively avoid this by clear delineation of the role of NLMC and redraw that of the DIPAM if necessary and also crack the whip judiciously to give impetus to the process of disinvestment.

The other area of concern is the long-drawn legal battles that the government departments are confronted with when it comes to land acquisition. NLMC is also bound to face similar roadblocks unless some structural reforms are done in that area.

### **Conclusion**

The intention of the government seems to be clear and genuine. If the above roadblocks are avoided, NLMC is bound to be a game changer scaling up the economic activity in general and achieving the monetization and disinvestment targets in particular.





# PM MODI Pledges USD 1 million to BIMSTEC

**Theme:** “Towards a Resilient Region, Prosperous Economies, Healthy People”.



PM Modi attended the 5<sup>th</sup> BIMSTEC summit on 30<sup>th</sup> March 2022 hosted virtually by Srilanka

### Highlights

- The adoption and signing of the BIMSTEC charter which formalized BIMSTEC into an organization with flags, emblems and listed principles to adhere to.
- PM Modi pledged the BIMSTEC Secretariat USD 1 million to increase its operational budget.

## BIMSTEC

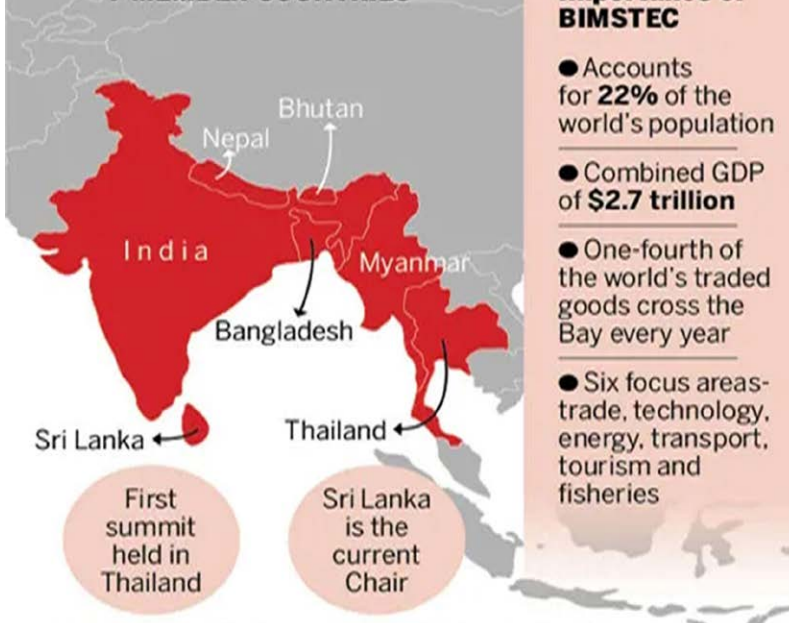
WHAT YOU SHOULD KNOW



Stands for **The Bay of Bengal Initiative for Multi-Sectoral Technical and Economic Cooperation**

Founded in 1997 through **Bangkok Declaration**

### 7 MEMBER COUNTRIES



### Importance of BIMSTEC

- Accounts for **22%** of the world's population
- Combined GDP of **\$2.7 trillion**
- One-fourth of the world's traded goods cross the Bay every year
- Six focus areas- trade, technology, energy, transport, tourism and fisheries

First summit held in Thailand

Sri Lanka is the current Chair

### Main topics

- COVID-19 pandemic related challenges.
- Uncertainties within the international system.
- Progress of BIMSTEC as a regional group.
- Establishment of basic institutional structures and mechanisms of the group.

### BIMSTEC Agreements

- Convention on mutual legal assistance in criminal matters.
- MoU on mutual cooperation in diplomatic training.
- Memorandum of Association on Establishment of BIMSTEC Technology Transfer Facility.



# BANARAS LOCOMOTIVE WORKS produces 367 locomotives between 2021-22

## DO YOU KNOW

**The crank case surrounds the connecting rod and crankshaft and prevents them from damage due to contamination. It stops the entry of debris into crankshaft and connecting rod.**

**In complex engines, it helps to circulate the oil. It also acts as a pressurization chamber for the fuel-air mixture.**

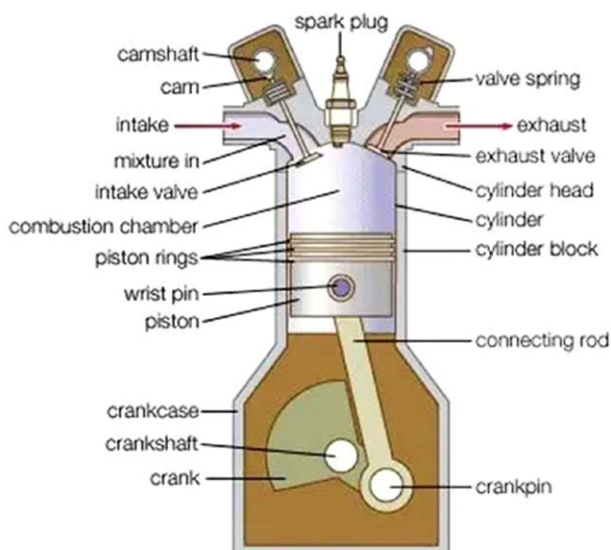
**B**anaras Locomotive Works (BLW) manufactured 367 locomotives during the financial year of 2021-22. **The Ministry of Railways has remarked that it is a record output and the best performance to be reported since the founding of BLW in 1961.** These locomotives include 31 passenger locomotives, 332 freight locomotives and four locomotives for Mozambique, Africa.

BLW has earned ₹ 60.68 crores from exporting locomotives

and a revenue of ₹ 6.09 crores from exporting locomotive parts during the financial year 2021-22. BLW only made ₹ 1.08 crores during the financial year 2020-21 from exporting locomotive parts, which shows a 464% growth just during the past year.

The BLW Cape Gauge diesel locomotives exported to Mozambique are currently successfully being operated as multiple units to transport coal from mines. The crank-case assembly, which is the most important item of the engine, is made in-house at BLW.

A five-member high-level delegation of National Railways of Zimbabwe visited BLW recently. BLW general manager Anjali Goyal welcomed them and assured them about the promptness in fulfilling the export orders. She also assured them of Indian Railways' keen interest in participating in the economic growth and modernization of Zimbabwe. In the spirit of Atmanirbhar Bharat, BLW will also focus on increasing production for internal use and export.





# Indian Antarctic Bill 2022

The Indian Antarctic Bill 2022 was introduced in the Lok Sabha by Earth Sciences Minister Jitendra Singh on

had research stations set-up in the Antarctic by the year of 1957-58. India signed it in 1983.

The bill aims to regulate and monitor the activities in the research stations there. India maintains two research stations on Antarctica – Maitri (since 1989) and Bharati (2012) – and has launched 41 expeditions to the continent thus far.

The bill prohibits drilling, dredging, excavation or collection of mineral resources or even doing anything to identify where such mineral deposits occur for reasons other than scientific research. It also strictly prohibits activities that could damage, disturb or adversely affect the habitats of local flora and fauna.

The bill has a system of permits issued by a government-appointed committee without which no expedition or individual can enter Antarctica. This will apply to Indians, foreign citizens, corporations, firms and joint ventures functioning in India, and any vessel or aircraft that is either Indian or part of an Indian expedition.



**The bill strictly prohibits activities that could damage, disturb or adversely affect the habitats of local flora and fauna.**

1<sup>st</sup> April 2022. This aims to provide for national measures to protect the Antarctic environment and associated ecosystem and to give effect to the Antarctic Treaty.

Antarctica is the only continent with no native human population and there were multiple attempts during the World War and Cold War to establish claim over it. To preserve the continent as a scientific reserve for academic investigation, the Antarctic Treaty was established in 1959. This bans all military activity on Antarctica. Initially, it was signed by 12 countries who





# BROADCAST SEVA PORTAL **Launched**



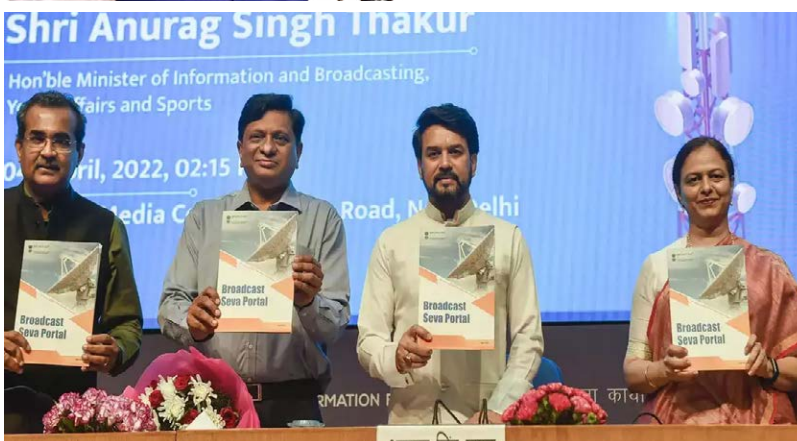
**A**nurag Thakur, Union Minister of Information and Broadcasting, launched the Broadcast Seva Portal in New Delhi to make marketing business easier.

Broadcast Seva Portal, a transparent and accountable online

portal which enables speedy filing and processing of applications of broadcasters for various kinds of licenses, permissions, registrations etc., through a single window. The initiative received positive feedback from its users during the test-run.

More than 900 Satellite TV Channels, 70 Teleport operators, 1700 multi-service operators, 350 Community Radio Stations (CRS), 380 private FM channels and others will profit directly from this effort.

This in turn will improve the business environment and strengthen the whole broadcast industry. Additionally, it no longer necessary for the stakeholders to visit office to seek authorization.





# PRAKRITI

## AN AWARENESS

### MASCOT



Though plastic has many benefits for humans in certain areas, its overuse has turned it into a nightmare for the world.


On 5th April 2022, Union Environment Minister Bhupendra Yadav launched 'Prakriti,' a mascot to raise awareness among people about the small changes that can be made in daily life to help the environment. It is another step toward the abolition of single-use plastic.



## DO YOU KNOW ?

- Single use plastics cannot be recycled nor reused. Moreover, their components are mainly poisonous fossil fuel based chemicals.
- Cellulose, crude oil, coal, natural gas and salt are the main raw materials for plastic.





# Leading Lights of Indian Origin part of India's **SEMICONDUCTOR MISSION**

The successful completion of the ISM will entail huge opportunities that will spur growth and put India in the orbit of self-sufficient and self-reliant countries.

India is focussed in its pursuit to become a global leader in semiconductor manufacturing, design and innovation. To further this objective, an advisory committee of experts has been formed comprising senior government officials, reputed academicians, industry and domain experts. The Union Cabinet has approved the programme with a total outlay of ₹ 76,000 crore.

India Semiconductor Mission (ISM) has been set up within Digital India Corporation to develop strategies for development of semiconductors and the necessary ecosystem. The mandate for the newly formed Advisory Committee will be to fulfil the objectives in an organised and structured manner and ensure guidance to ISM. The scheme envisages making India a global electronics hub because shortage and non-availability of microchips puts a hurdle in industrial production and growth.

ISM will serve as the nodal agency for efficient and seamless implementation of the various schemes.

The 17-member committee will provide key inputs for a resilient supply chain, promote global engagement, research and innovation etc. It includes **Vinod Dham** of Pentium fame, **Ajit Manocha** of Global Foundries, **Arogyaswamy Paulraj** of MIMI Wireless communication, **Pradeep Khosla**, a renowned academician, **V Kamakoti**, Director, IIT-M, Chennai, **Neelkanth Mishra**, a member of the Economic Advisory Council to the PM, **Ajai Chowdhry**, one of the six founders of HCL to name a few.

The successful completion of the ISM will entail huge opportunities that will spur growth and put India in the orbit of self-sufficient and self-reliant countries.

# EPIC FOUNDATION

**EPIC Foundation's philosophy is to create equitable access for all including differently-abled citizens. Its logo has the words "EPIC" written in Braille.**

While India is making rapid strides in electronics manufacturing for global brands and products, Indian products and brands in electronics are slowly disappearing over the last 2-3 decades. Today, the market share of Indian electronics products is less than 10% in most of the high-volume categories like Tablets, Wi Fi routers, LED Lights, Security Cameras, Chargers / Inverters etc., with China being among the Top 5 manufacturers in all these categories.

To address this issue especially in the context of Atmanirbhar Bharat Mission, HCL Co-Founders Ajai Chowdhry and Arjun Malhotra have announced the formation of EPIC (**Electronic Products Innovation Consortium**) Foundation, as a non-profit organization launched on 13th April 2022, with Dr. Satya Gupta, a veteran of the semiconductor industry as its CEO.

For building a strong eco-system of partners, EPIC Foundation is

simultaneously working with state Governments, academia and industry.

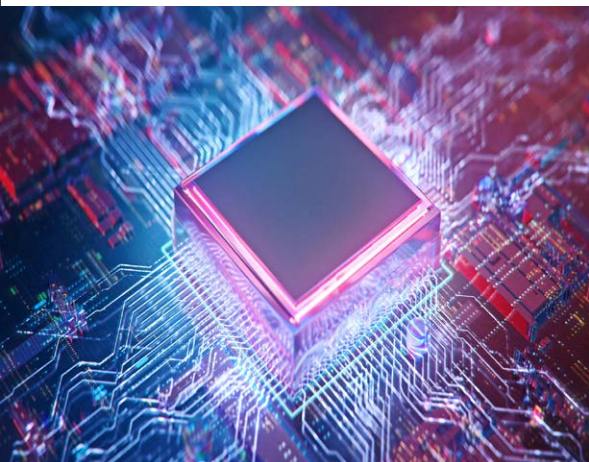
The initial objective will be to help Indian electronic industry reach a 25% market share in the USD180 billion electronics industry. This will create much needed additional jobs and also ensure critical infrastructure and information security for India. EPIC Foundation's philosophy is to create equitable access for all including differently-abled citizens. Its logo has the words "EPIC" written in Braille.

## Two critical products announced:

1. **A 10.1 Inch Tablet** for education and social empowerment with unique features of repairability, upgradability and AI/ML based inter-lingual translation for Indian Languages (Voice-2-Voice, Text-2-Text etc.) to support language diversity of India and help the differently-abled.
2. **LED Driver chip**, a very vital electronic component, consumption of which by our industry is currently at 700 million units and expected to touch a billion in few years.

With such support coming in, we are sure to become an Atmanirbhar Bharat very soon.





# Low Contact Resistance Metal-Semiconductor interface for Next-Gen Transistors

This semi-conductor, when used in the next generation of transistors, can prove instrumental in the development of self-powered nano and microelectronic devices.

The Ministry of Science and Technology announced on 8th April 2022, the design of high-performance metal semiconductors for next generation transistors.

Transistors play an important role in everyday electronics and over the years, scientists have been finding ways to make them smaller and more efficient. These are connected together using semiconductors. These interconnected networks of transistors and semi-conductors are what we see in circuit boards across all electronic devices.

The very cutting edge of this research happens in the field of low contact metal semi-conductors which work at extremely microscopic levels to improve efficiency. Traditionally semiconductors have been graphene-based

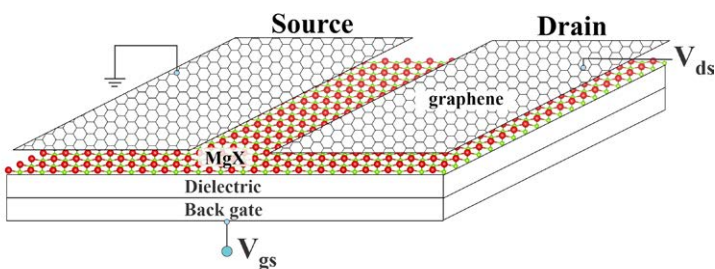
where, carbon atoms are layered in a honeycomb like pattern in the 2-dimensional realm.

But graphene as a material has several limitations. As it lacks resistance, the control of the flow of current through it is difficult. Research in this field is focused on finding solutions to these problems.

Scientists from the Institute of Nanoscience and Technology (INST) have designed alternatives to graphene-based semiconductors. Named **MgX**, these have the same properties of graphene but an increased control over resistance.

Similar to graphene, MgX is made up of a single layer of atoms which can change its electrical resistance when a magnetic field is applied to it. This semi-conductor, when used in the next generation of transistors, can prove instrumental in the development of self-powered nano and microelectronic devices.

While still in the theoretical stages, this research is indicative of enormous possibilities in the field of electronics.



Nanoscale, 2021, 13, 8210  
Physical Review B, 2021, 104, 165421





# FIRST MADE IN INDIA COMMERCIAL PLANE begins operations

**Union Civil Aviation Minister Jyotiraditya Scindia, said, "The number of airports has jumped from 9 in the region in 2014 to 15 as of today."**

**T**he first commercial Made-in-India Dornier 228, manufactured by Hindustan Aeronautics Limited (HAL) started operations by connecting Dibrugarh with Pasighat and Lilabari (Assam). HAL has been manufacturing Dornier aircrafts after transfer of technology from the German firm that owned it. In the next month, the route will be expanded to include Tezu and Ziro towns of Arunachal Pradesh.

Union Civil Aviation Minister Jyotiraditya Scindia said, "The number of airports has jumped from 9 in the region in 2014 to 15 as of today. The number will continue to grow in the next 6 months. The greenfield airport at Hollongi, Arunachal's first full-fledged airport (being built at an estimate cost of ₹ 650 crore), is just one. Eighteen new airstrips and

heliports worth Rs 180 crore will be built in the North East in the coming days."

## **Northeast India's first Flying Training Academy in Assam's Lakhimpur**

The Lilabari Academy, construction of Hangar and Taxiway was done in less than 10 months. The Redbird Flying Club shall give a 200-hour commercial pilot training. The two aircrafts for training are Tecnam P2008JC Single Engine and Tecnam P2006T Multi-engine with plans to increase additional 5 units. The academy aims to make the aspirants capable of flying Airbus or Boeing 737. They plan to train at least 100 pilots every year. Currently 40% of our pilots get trained abroad resulting in the loss of ₹ 500 crore of foreign exchange. Applicants need to be above 18 years of age and should have completed their 12th Board exams with English, Physics and Maths. After training, students can be employed in Airlines, Private charter services, Air ambulances, Government pilot jobs and Cargo/freighter services.



# Pradhan Mantri Sangrahalaya

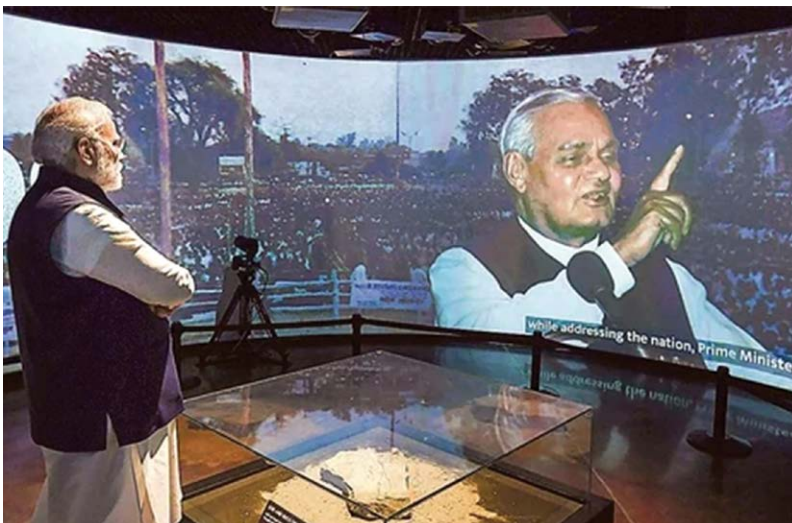
**P**M Modi inaugurated the Pradhan Mantri Sangrahalaya in New Delhi on 14th April 2022 as part of Azadi ka Amrit Mahotsav.

The design is inspired by the story of rising India, shaped and moulded by the hands of its leaders.

Designed by Tagbin at a cost of ₹ 271 crores integrates Teen Murti Bhawan (Block I) with the newly constructed building (Block II) spanning 15600 square metres with 43 galleries.

## On Display

- Personal items, gifts and memorabilia like medals, commemorative stamps, speeches of PMs and anecdotal representations of ideologies.
- Cutting edge technology-based interfaces like holograms, virtual reality, augmented reality, multi-touch, multi-media, interactive kiosks, computerised kinetic sculptures, smartphone applications, interactive screens and experiential installations.





# INDIAN DEFENCE EXPORTS

have grown **SIX-FOLD!**

**Defence Minister Rajnath Singh has set goals of USD 25 billion of domestic defence production and USD 5 billion of defence exports for India.**

India has exported military hardware and systems worth ₹ 38,500.25 crores in the last seven years. Presently, India is exporting defence equipment to more than 75 countries around the globe.

India's defence exports in crores	
2014-15	₹ 1,940.64
2018-2019	₹ 10,7465.77
2019-20	₹ 9,115.55
2020-21	₹ 8,434.84

Defence Minister Rajnath Singh has set goals of USD 25 billion of domestic defence production and USD 5 billion of defence exports for India. The highest level of strategic alignment between New Delhi and South East ASEAN nations has given

impetus to cooperate closely in areas of defence and security. A large exchange of defence business between India and Southeast Asia may consolidate India's position in the regional security architecture, and also forge greater political alignment with important ASEAN partners.

Various policy initiatives and reforms taken by the Govt include

- 1) Attracting investment for intermediate goods industry.
- 2) Encouraging foreign original equipment manufacturers (OEM) to discharge offset obligations by investing in these industries and facilitate sufficient supply, export to foreign markets, and incentivise more foreign OEMs to set shop in India.
- 3) Attract potential investors, entrepreneurs in the aerospace and defence sector.







## DO YOU KNOW ?

**Offsets** are provisions in an import agreement, between an exporting foreign company or possibly a government acting as intermediary and an importing public entity.

**LCA – Light combat aircraft**

- Set direction towards domestic manufacturing and augmentation of technical capability.
- Changes in FDI policy to enable up to 100% investment in defence, simplifications in industrial licensing to facilitate ease-of-doing-business and associating other departments / ministries and associating academia by collaborating with IITs and other engineering colleges.
- India's Atmanirbhar Bharat initiatives.

### Indian defence exports now include

- personal protective items
- defence electronics systems
- engineering mechanical equipment
- offshore patrol vessels
- advanced light helicopters
- avionics suits
- radio systems and radar systems



- smaller defence components
- defence related software solutions

India has been looking at LCA 'Tejas' exports at ₹ 309 crore per aircraft. India's Akash air defence system, light arms and unmanned aerial systems (UAS) also have a huge market. India also has the potential to develop Artificial Intelligence (AI) solutions.

Eventually, India's defence export strategy would have to balance China in the Indian Ocean Region. China has the economic might to sell arms cheaper. It is time for India to have a dedicated defence export department.





# India Test-Fires MRSAM & PINAKA

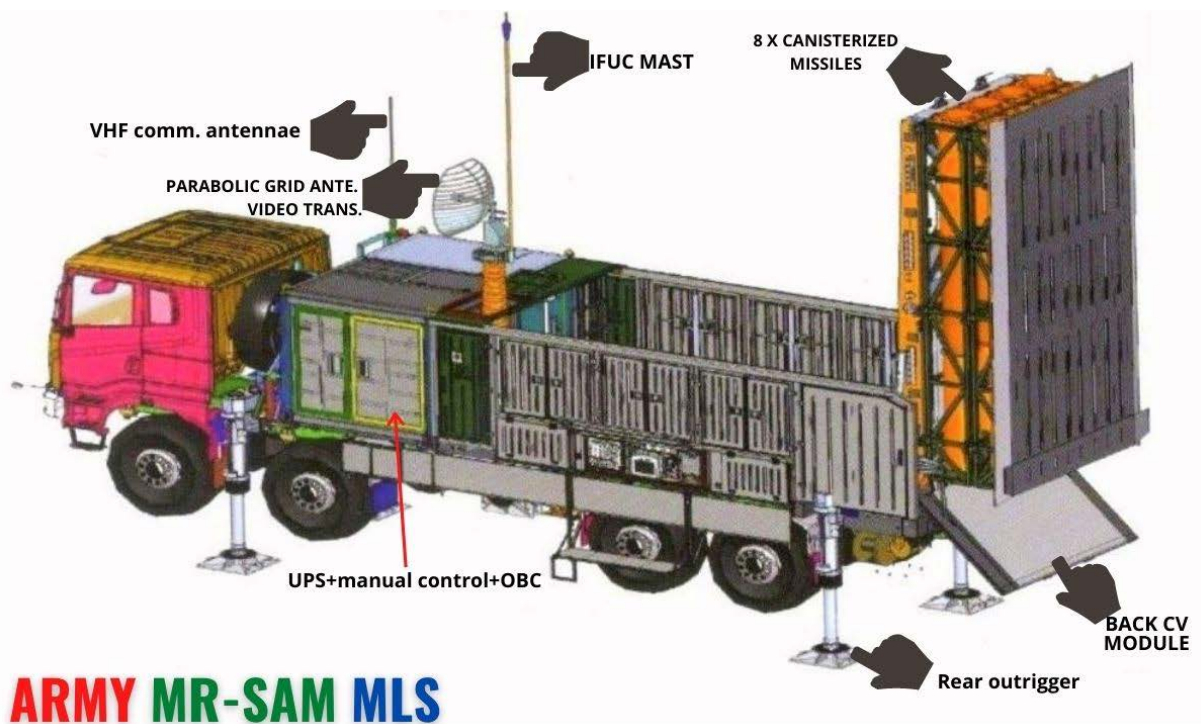
**MRSAMs are designed to intercept high speed aerial targets at medium range both in very high altitudes and in low altitudes.**

**T**he Defence Research and Development Organisation (DRDO) announced on 30th March the successful test firing of Medium Range Surface to Air Missiles (MRSAMs) off the coast of Odisha. Fired from the Integrated Test Range launch pad near Balasore, these tests were to check the capability and functionality of these missiles in both defensive and offensive situations.

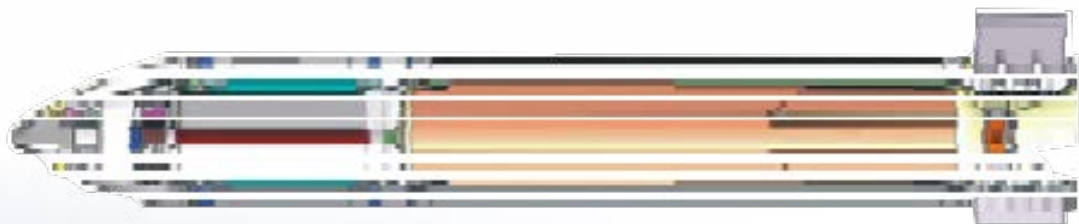
MRSAMs are designed to intercept high speed aerial targets at medium range both in very high

altitudes and in low altitudes. The MRSAM's have been designed in partnership with the Israel Aerospace Industry (IAI) for use in the Indian Army.

Alongside the testing of the MRSAMs, over the following fortnight, the Pinaka multi-barrel rocket launcher was also test fired in various sites across the nation. The upgraded system, made entirely within India, is capable of firing missiles up to 90 km, an increase over the previous maximum of just 60 km.



## ARMY MR-SAM MLS



## PINAKA

**“ These tests are major milestones for an Atmanirbhar Bharat, capable of standing on its own alongside other military superpowers of the world. ”**

The testing of these systems was conducted by flight data captured from instruments like radars and telemetry systems, the results of which were overseen by senior officials of the DRDO.

The success of these MRSAMs and improved efficiency of the Pinaka Missile

system ensures that when implemented they can be used to defend against incoming missile and aircraft-based attacks.

These tests are major milestones for an Atmanirbhar Bharat, capable of standing on its own alongside other military superpowers of the world.

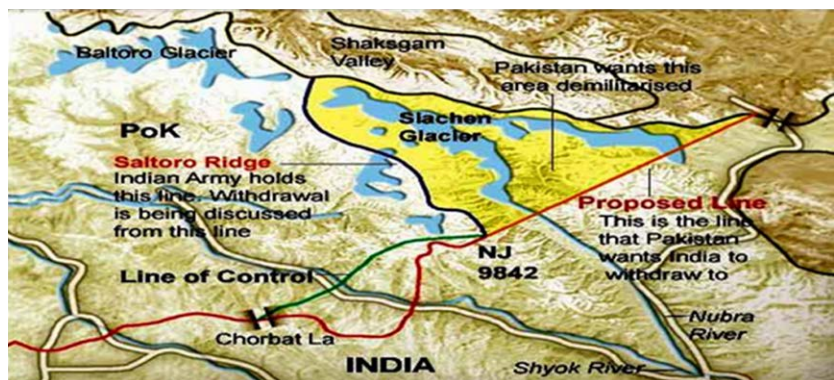


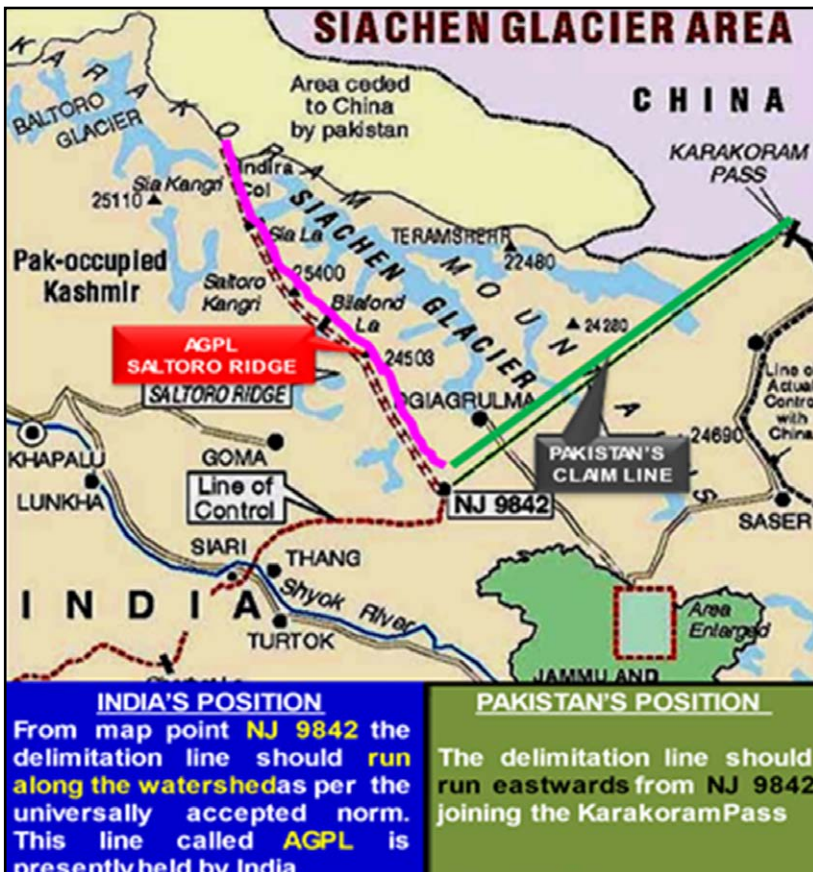


Indian Army marks Siachen Day on 13th April every year to commemorate the courage of our valiant army under "Operation Meghdoot".



Indian Army marks Siachen Day on 13th April every year to commemorate the courage of our valiant army under "Operation Meghdoot". This day also honours Siachen warriors securing the highest and coldest battlefield in the world.





In 1984 Operation Meghdoot was launched by India. It resulted in India gaining complete control over all of Siachen Glacier and included its tributaries. It pre-empted Pakistan's own military move - Operation Ababeel - by a day to occupy the dominating heights on Saltoro Ridge located at the west of Siachen Glacier.

The 1972 Cease-Fire Agreement was signed in Karachi by top military representatives of India and Pakistan as well as the UN Military Observer Group in India and Pakistan.

### Genesis of the conflict

At the heart of the problem is the interpretation of the 1949 Karachi and 1972 Shimla agreements by both sides. During both these negotiations, India and Pakistan demarcated their borders only up to the map coordinate point NJ 9842.

The 1972 Cease-Fire Agreement was signed in Karachi by top military representatives of India and Pakistan as well as the UN Military Observer Group in India and Pakistan. The purpose of the Karachi meeting was to establish a ceasefire line in Jammu and Kashmir.

### Operation 'MEGHDOOT'

Colonel Narendra Kumar, a reputed mountaineer and

Commandant of the High Altitude Warfare School (HAWS, Gulmarg) came across a map in the possession of a German rafter in 1977, which showed a dotted line joining NJ



9842 to the Karakoram Pass thus depicting that the India-Pakistan boundary line ended at NJ 9842, following the UN-mediated ceasefire in 1949.

He then launched a couple of expeditions from 1977 onwards and unearthed the Pakistani plan to control the territory.





Pakistan had already taken the first few steps by opening the area to mountaineering expeditions by civilians and was inching towards gaining military control. It was under these circumstances that **Operation Meghdoot** was launched.

Further attempts to capture the region were launched by Pakistan in 1990, 1995, 1996 and early 1999, just prior to the Lahore Summit. Under **Operation Badr** in 1999,

Pakistan's infiltration across the Line of Control (LoC) in the Kargil area was undertaken to sever the link between Kashmir and Ladakh (remembered by us as the **KARGIL WAR- Operation Vijay**). The aim was to push the Indian Army out thus forcing India to negotiate a settlement of the broader Kashmir dispute.

However, Pakistan was taught a bitter lesson by our own Armed Forces.

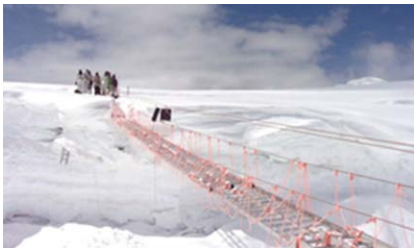
## FEW GLIMPSES OF SIACHEN GLACIER



**CREVASSE XG AND RESCUE**



**AVALANCHE HAZARD**



**Highly crevasse prone** - Siachen restricts movement and needs special skill and training and equipment / gear as part of personal load



**Cloud and white out conditions**- hinders movement of men, material and surveillance

On 13th April 1984, Indian troops snatched control of the Siachen glacier in northern Kashmir, narrowly beating Pakistan. Nearly four decades later what started as a battle with crampons and climbing rope has turned into high-altitude trench warfare with the two sides remaining locked in a stand-off and in pretty much the same positions. The struggle between India and Pakistan over the Siachen glacier has even introduced a new term **oro-politics** or mountaineering with a political goal. The word 'oro' is derived from the Greek for mountain.

The Siachen Glacier remains the highest battleground on earth. Both countries maintain a permanent military presence in the region at a height of over 6,000 metres as on date. An estimated 2000 soldiers have died in this inhospitable terrain, mostly due to extreme rarefied weather conditions and the natural hazards of mountain warfare.



# Zero Budget Natural Farming

**Chemicals kill the bad pests, but they also decimate the friendly bacteria essential for the plants and the earthworms that are extremely useful for soil health.**

**F**arming, especially for those with small land holdings, is a thankless, risky and a back-breaking venture. And Indian agriculture for various historic reasons is characterized by numerous small farmers with an average land holding of only about 1.08 hectares (1 hectare = 2.47 acres). The kind of challenges that a small farmer takes is unimaginable for any contemporary city-based entrepreneur. From a simple perspective, these challenges can be categorized as under:

- **High input costs:** Chemical fertilizers, pesticides and seeds, digging of borewells, electricity, financial capital and farm labour make the profitability of farming itself very low.
- **Produce risk:** Unpredictable weather (drought / excess rains), sudden pest attacks etc., can wipe out the entire produce.
- **Market risk:** Low prices for the final produce which the farmer needs to sell almost

immediately in the local market itself. He is generally unable to store or transport and market it at distant places for a better price.

After the Green Revolution in 1960s, Indian farmers have been overly reliant on chemical fertilizers, pesticides and hybrid seeds. Key chemical fertilizers include Urea, DAP (Di-ammonium Phosphate) and MOP (Muriate of Potash). While, it definitely led to increase in overall production of food grains, there have been numerous side-effects now manifesting in diverse ways.

Farmers are increasingly complaining of depleting fertility of soils, soil salinity and alkalinity and problems of ground water pollution. Chemicals kill the bad pests, but they also decimate the friendly bacteria essential for the plants and the earthworms that are extremely useful for soil health.

Additionally, overuse of these chemical-based inputs has clearly led to negative impact on public

## Prior to 1940 and the rise of modern commercial farming practices, all farming was naturally organic.

health, with increased incidence of kidney ailments, cancer and non-communicable diseases. Some of these are so toxic that, at times farmers themselves become unconscious or even die while spraying them on the farms.

Also, these come at a significant cost and are highly dependent on the price of the two main energy sources required for their production – coal and natural gas.

Though the Indian government has been subsidizing these inputs by bearing part of the costs (annual subsidy on fertilizer alone is expected to be ₹ 1,30,000 crores in 2022, i.e. approx. ₹ 1,000 annually per every Indian), there is still a significant cost that has to be directly borne by the farmer.

For example, a 45-kg sack of urea actually costs approximately ₹ 450. The government subsidizes to the extent of ₹ 180.

However, the farmer needs to directly pay ₹ 270 for the 45-kg sack, i.e. ₹ 6 per kg.

The small farmers are caught in a debt trap owing to the loan taken to meet the high cost of farming. This along with the inherent risk associated, has led to farming becoming a very unattractive proposition for them. They constantly seek loan waivers. Some who are unable to withstand the pressure from local lenders also end up committing suicide.

What should possibly be India's approach going forward?

### Organic farming

Over the last decade, organic farming has become a buzz word. The term “organic farming” was first used around 1940. In fact, prior to 1940 and the rise of modern commercial farming practices, all farming was naturally organic.

In the last 80 years, all life and face of the earth has changed at a rapid rate. We now routinely and unknowingly consume chemicals, genetically modified and irradiated foods.

Unfortunately, the public perception towards organic farming has led to a ‘hype’ and resultant over-commercialization.

Instead of chemical fertilizers, the organic farmers today are being marketed expensive bio-fertilizers by large companies. Also, to produce vermicompost they often procure earthworms from abroad that are high-maintenance and die easily.

Also, since the quality of existing soil has already degraded significantly due to constant use of chemicals, the shift to organic farming generally leads to an average drop-in yield of

### Providing Subsidy

The process of providing subsidy in a large, diverse country like India can be quite complicated. For example, urea is used by multiple other industries, like chemicals, pharmaceuticals, plastics, textiles, paper etc. apart from agriculture. Government intends to provide subsidy on urea that is to be used only for agriculture, so that farmer's inputs costs are lower to that extent.

Unfortunately, middlemen misuse the subsidy, by declaring



that urea is to be supplied to farmers but instead divert it to other commercial industries at a price much higher than ₹ 270 but lower than ₹ 450, thus unjustly pocketing the difference.

GOI is contemplating introducing the ‘Direct Benefit Transfer’ (DBT) scheme, wherein the farmer will need to also buy the urea in open market at ₹ 450 and upon producing of receipt to the government, the subsidy amount of ₹ 180 per sack, will be directly transferred to the farmer's registered bank account. This scheme already being implemented for other products like LPG cylinders, will ensure that the malpractices adopted by the middlemen are significantly reduced.





about 20% for the first couple of years. Therefore, with continued substituted high input costs and lower yield, organic farming has today become an expensive farming practice. There are challenges in

'organic' farming as the world sees it today and is therefore unsustainable. Sri Lanka saw a disastrous impact on its economy by abruptly shifting to organic farming in 2020. Heavily dependent

on purchase of organic fertilizers from China, Sri Lanka witnessed a sudden dip in its agricultural yield with input costs still remaining relatively high.

### Zero budget natural farming

Zero budget natural farming (ZBNF) which promotes the use of the desi (indigenous breed) cow, its dung and urine for agricultural purposes is turning out to be a promising tool to minimise the dependence of farmers on expensive chemical / inorganic fertilisers and pesticides, thereby reducing the cost of production and making farming relatively more profitable.

The concept is that the farmer should be able to produce based on inputs available in its local ecosystem. Natural farming uses nothing that is store-bought. It primarily relies on '**Jeevamrut**' – natural fertilisers made from cow dung and urine of native cattle species.

All that a farmer requires is a healthy native breed of cattle which produce eight to ten kilograms of dung and about the same quantity of urine a day. Jaggery and chickpea flour are mixed with this and stored in a drum in the shade. It has been found that one gram of dung from native species of cattle contained more than 300 crores of useful bacteria in it - a treasure trove!

All the ingredients are mixed in a large container and kept covered with a log or sack to prevent direct sunlight. The mixture is stirred twice a day, clockwise, and in six days fertiliser enough for one acre of land is ready. About 200 litres of this mixture should be sprayed twice a month per acre.

Just as a spoonful of curd can convert a bowl of milk into curd, the jeevamrut spreads its goodness



**DO YOU KNOW ?**

Cultivating earthworms in order to convert organic waste into fertilizer is called **Vermicomposting** or **Vermiculture**. This is done using various species of worms that feed on the organic waste (e.g.: cow-dung) and produce nutrient-rich manure.

The nutritious excreta of earthworms make the soil fertile. They move throughout the soil and loosen it, allowing air circulation and enabling the roots to get enough space to grow and extend.

The end product or manure is called vermicompost which is rich in nitrogen, phosphorus and potassium, water-soluble nutrients and is an excellent organic fertilizer and soil conditioner. It is used in farming and small-scale organic farming.





**Bijamrita helps in protecting young roots from fungus, as well as from soil-borne and seed-borne diseases that commonly affect plants post the monsoon.**

through the soil. As a great nitrogen fixer, it nourishes the roots of the plant.

All the nourishing ingredients are already present in the soil and the jeevamrut essentially acts as a catalyst to get them working. It does the work of a cook in a kitchen. The ingredients are all present in the kitchen, it requires someone to put them together to produce food. **Jeevamrut should not be applied on dry soil as it will immediately kill the microorganisms in the mix.** The soil needs to be watered before applying the mix.

#### **Why is Jeevamrut so effective?**

Dung from the *Bos indicus* (humped cow), i.e. Indian native cows is highly beneficial and has the highest concentrations of micro-organisms as compared to European cow breeds such as Jersey or Holstein. The ZBNF method is centred on the Indian cow. When a farmer unties his or her cow, she wanders around leaving behind dung here and there.

If the dung is left where it is and if it is flipped around after a day or two, there will be pores on the underside indicating how bacteria have burrowed into it to be nourished. So, when we put jeevamrut of which cow dung and urine is a critical component, into

### **Jeevamrut formula**

- 2.5 kg of cow dung.
- 1 litre of cow's urine.
- 1/2 kg jaggery.
- 1/2 kg of any pulse's powder - Beans, Black gram, Cowpea, Bengal gram, Red gram, Pigeon pea.
- A handful of soil devoid of chemical pesticides or fertilisers.
- 50 litres of water to dilute the mix.

the soil, the bacteria emerge to the surface to feed to get nourishment and in turn nourishes the soil and plants.

Natural farming is based on four pillars. Jeevamrut is the key pillar. The other three supporting aspects are:

#### **Bijamrita**

Bijamrita (**Bija** means 'seed' ; **amrita** means 'nectar') is a treatment used for seeds, seedlings or any planting material.

Bijamrita helps in protecting young roots from fungus, as well as from soil-borne and seed-borne diseases that commonly affect plants post the monsoon.

In this process the seeds are coated with a special mix which is prepared using similar ingredients as Jeevamruta - local cow dung (a powerful natural fungicide), cow urine (a strong anti-bacterial liquid), lime and soil.

#### **Acchadana – Mulching**

Mulching is the process of covering the open surface of the farm by a layer of naturally



# TOP 4 PILLARS OF ZERO BUDGET NATURAL FARMING



**Whapasa is the condition in which the soil contains both air and water molecules.**

decomposable material like dry leaves, grass, paddy straw, sugarcane molasses, green manures, gunny bags, coconut leaves, peanut shells, etc. Using these natural materials as mulch increases humus content of soil and improves overall soil quality.

Mulching also helps to retain soil moisture, so less amount of water is required during irrigation. It traps surface water of the soil which would otherwise get evaporated quickly. It thus directly conserves water. Mulching also helps to regulate soil temperature, which is beneficial for proper root growth.

## Whapasa – Moisture

Natural farming opposes the common belief that the plant roots need a lot of water. It is contrary to the over-reliance on irrigation in green revolution farming. Natural farming strongly advocates that the roots need water vapour.

Whapasa is the condition in which the soil contains both air and water molecules.

Natural farming encourages the reduction of irrigation and emphasizes its usage only during noon time in alternate furrows.

## Difference between ZBNF and Organic Farming

S.No	Zero Budget Natural Farming (ZBNF)	Organic Farming
1.	No external fertilizers are used.	Organic fertilizers such as compost, cow dung and vermicompost are used.
2.	No tilling and no mixing; requires natural ecosystems.	Requires basic methods like tilling, intensive ploughing, mixing, etc.
3.	Low-cost due to the local biodiversity.	Expensive due to the need for bulk manures.





## The story of Subhash Palekar

In 1972, Subhash Palekar graduated with a B.Sc in agriculture. He returned home eager to implement all that he had learnt in college. His father, had a farm in Belora, a small village in the Amravati district, Maharashtra.

He advised his father on modern techniques, and also urged him to use pesticides and chemical fertilizer. Following his advice, crop yield increased considerably — for almost a decade. Then, by 1985 there was a drop in the yield and with each successive year it only got worse. Palekar began to study the decline.

He spent three years of intense research and finally arrived at the conclusion that chemical farming was the reason for the decline. Chemical fertilizers and pesticides had decreased the fertility of the soil and wreaked havoc with the ecosystem of that area, leading to long term health problems for those who ate the fruits, vegetables and grain grown in these conditions.

Shocked, Palekar realised he needed a healthier alternative. He studied forest vegetation. He discovered that the natural system

at work in the forests allowed the vegetation to grow and take care of itself and at the same time maintaining healthy ecosystems. This was made obvious by the big fruit-laden trees he saw in the forests. Obviously, they had not been aided in their growth by pesticides and fertilizer. These are proof that plants can and do grow healthily without chemical help.

Whereas in a farm, the micro-organisms that convert raw nutrients into easily digestible form have been destroyed by the chemicals. He decided to mimic the technique in his own farm. For six years, he experimented and verified techniques. Finally, he arrived at zero budget natural farming where the cost of growing and harvesting plants is zero, without chemical pesticides and fertilizers to grow a healthy crop.

Palekar took his findings to farmers across the country. More than 40 lakh farmers have benefited. **In recognition of his work, he was conferred with a Padmashri Award (2016).** He was the first active farmer to receive the award.

Palekar took his findings to farmers across the country. More than 40 lakh farmers have benefited.

In June 2018, Andhra Pradesh announced a plan to become India's first state to practise 100% natural farming by 2024 while aiming to phase out chemical farming over 80 lakh hectares of land. Other states including Karnataka, Himachal Pradesh, Gujarat, Chhattisgarh, Kerala, Karnataka and Uttarakhand are also increasingly adopting natural farming.

Addressing thousands of farmers at the National Conclave on Natural Farming (2021), PM Modi remarked, "Natural farming will benefit the country's 80% farmers, who are small-scale and have less than two hectares of land, as they spend a lot on chemical input. But using natural fertilisers will benefit them with low expenditure and more profit."



# Carnatic Music



The thousands of hymns in the Vedas, which are dedicated to the Gods and Hindu rituals, in the form of chants were passed down by oral tradition from generation to generation.

Music had been woven into the fabric of India's various philosophical, religious, cultural and literary traditions for over long ages, stretching back to the forgotten periods of its un-recorded history.

A special branch of study devoted to the theory and practice of Music (*Samgita-shastra*) was developed and enlarged, in stages. Samgita-shastra, right from the

ancient times, is deemed as an integral part of the broad framework of ideas that systematically explain the philosophical basis of sound (*Nada*); the grammar and language of music; and its aesthetics.

## The Origin

**Vedic Origins:** It is generally accepted that the Vedas are a probable source of Indian music, which has developed over the



centuries into the sophisticated system that it is today. "Veda" means knowledge.

The thousands of hymns in the Vedas, which are dedicated to the Gods and Hindu rituals, in the

form of chants were passed down by oral tradition from generation to generation. Of the four Vedas - *Rig, Yajur, Sama and Atharvana*, the Sama Veda is said to have laid the foundation for Indian music.



The music system in practice during Bharata's period must have been similar in some respects to the present-day Carnatic system.

It consists mostly of Rig Vedic hymns, set to musical tunes. These used to be sung during Vedic sacrifices, using musical notes (3 notes - 7 notes), sometimes accompanied by a musical instrument.

**Sanskrit:** Apart from the Sama Veda, there are references to music and musical instruments in the Upanishads, Brahmanas and Puranas. Ramayana and Maha Bharata also have references to music. The music system in practice during Bharata's period must have been similar in some respects to the present-day Carnatic system. Bharata's *Natya Sastra* mentions many musical concepts that continue to be relevant to Carnatic music today.

In *Yajnavalkyasmṛti(III-4-115)* Sage Yajnavalkya describes *Sangita* as the most sublime of all the fine-arts that pleases and has the potential to convey all shades of emotions. It is a vidya when practiced diligently, can lead the aspirant towards liberation – Moksham.

After the *Sangita Ratnakara* of Sarangadeva (1210-1247 CE), the word "Carnatic" came to represent the South Indian classical music as a separate system of music.

Classical Indian music flourished in the southern capital cities, particularly in Vijayanagara and Thanjavur. A number of musical treatises describing the concepts of Carnatic music were written. The present form of Carnatic music is based on historical developments that can be traced to the 15th - 16th CE and thereafter.

**Bharata's Natyasastra** (The 2nd - 4th century CE) is the earliest treatise to extensively elaborate on the science of music and dance. Music is dealt only partly in this treatise. Yet, various aspects like the ancient melodies (*Jaatis*) which are the archetypes of *Ragas*, their characteristic features, structure and the classification of the ancient instruments have been made in this work. The notes (*swaras*), their varieties, combination (*varnas*) and other such aspects are also elaborately described. Bharata has given the fundamentals of music as comprising *Swara, Tala* and *Pada*. The music till Bharata's period was known as *Marga* (literally meaning 'way').

Almost all composers in Carnatic Music refer to music as originating from the Samaveda. Prominent among them are the Musical Trinity of **Muthuswami Dikshitar, Syama Sastri** and **Tyagaraja**. Saint Tyagaraja has dedicated many songs to the glory of music, and in one of his songs titled '*Nada tanum Anisham Shankaram*', (Lord Shiva, the embodiment of music) he proclaims, "I repeatedly worship the embodiment of music, which was born from the Samaveda, the foremost of Vedas."

### Theoretical aspects

The well-structured 72 *Melakarta scheme* was formulated by Venkatamakhi in his treatise





*Chaturdandi Prakasika* in 1660 CE. This scheme is the proud heritage of our music, and is not simply of academic interest but also has immense practical value to all musicians, musicologists and students. Other important treatises on music written during this period are the *Sangeeta Saramita* of Tulaja (1729 - 1735), *Sangeeta Sudha* of Govinda Dikshita and the *Sangraha Choodamani* of Govinda (1750).

By the end of the 19th century, notational schemes were developed for written representation of musical compositions. These were published in works like Subbarama Dikshitar's *Sangeeta Sampradaya Pradarsini* in Telugu and Manikka Mudaliar's Tamil work, *Sangeeta Chandrikai*. A.M Chinnasami Mudaliar published south Indian music compositions written in western staff notation. These early pioneers in recent times have paved the way for a research-oriented understanding of this practical art form.

While the theoretical works were trying to keep pace with the practical music, the practical music itself was evolving continuously and a number of luminaries have made a tremendous impact on refinement of this art form, to keep it fresh and alive.

**Practical aspects**

In the 18th century, within a short period from 1763 - 1775, were born the three great composers of Carnatic music, who were later to be celebrated as the **Musical Trinity (Trimurti)** - **Syama Sastri (1762 - 1827)** **Tyagaraja (1767-1847)** and **Muthuswami Dikshitar (1776-1835)**. All of them combined their immense knowledge, deep spirituality and profound traditional

musicianship with an amazing sense of creativity and innovative spirit. This has made their contribution to Carnatic music invaluable. The art of musical composition was elevated to great heights at their hands. All later composers have tried to live up to the standards set by these three bright stars. Other great composers who have contributed to the vast repertoire of Carnatic music compositions include **Swati Tirunal (1813-1847)**, **Vina Kuppayyar**, **Subbaraya Sastri**, **Gopalakrishna Bharati**, **Ghanam Krishna Iyer**, **Patnam Subramanya Iyer**, **Koteeswara Iyer**, **Muthaiah Bhagavata**, **Mysore Vasudevachar** and **Papanasam Sivan**.

**Musical concepts**

The 72 Melakarta scheme was responsible for the transformation in the Raga system of Carnatic music. Several new ragas came into existence and were popularised by means of compositions tuned by the Trinity along with others who followed the scheme. Many kinds of musical compositions developed, having different structural arrangements (musical forms). These include the **Varnam**, **Kriti**, **Padam**, **Javali**, **Tillana**, **Swarajati** and other varieties. These forms have continued to remain popular in the 20th century and beyond.

Till the end of the 19th century, the patronage of Carnatic music and musicians was mostly limited to the major temples and royal courts, as also a few rich landowners who arranged concerts for various events. In the 20th century, the patronage has taken a different shape, with the advent of a number of organisations (Sabhas) and corporate sponsors who have brought a more professional outlook to this traditional art-form.



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Carnatic music has many aspects – raga, rhythm, lyrical structure, lyrical content, etc. Every rasika has the option and right to enjoy any of these separately, selectively or collectively.

As a result, Carnatic music is now heard in all major Indian cities, as also in major centres in Asia, Europe and America

#### 4 Major Elements of Carnatic Music

##### Shruthi

Shruti is the raw sound of Carnatic music- the musical pitch of the composition. All other elements can go up and down, but the shruti of the piece will remain the same throughout the performance. All the notes of composition will always be connected to a shruti.

Thus, it is most important amongst all the elements of Carnatic music. Shruti is to Carnatic music what the 'key' is to western music. There are many sounds in a single scale of Carnatic music. Auditory perceptions recognize 22 shrutis. But auditory perception alone can't be the parameter of shruti. It is also determined by the listener's perception.

##### Swara

Swara of a song takes the composition to higher and lower notes playfully. There are seven swaras in Carnatic music. They are –**Shadja, Rishabha, Gandhara, Madhyama, Panchama, Dhaivata and Nishada**. You can call them musical notes or 'solfege' of Carnatic music and are generally known by their short forms - **sa-ri-ga-ma-pa-da-ni**. All seven swaras are derived from the sounds of birds and animals.

Every swara is comprised of three elements apart from Sa and Pa as these notes are drone notes. If you are a music enthusiast, you will enjoy learning the detailing of each swara. Although they are only 7 in numbers there is an entire universe of knowledge inside them.

##### Raga

Raga is the alignment of the swara in a composition. A

sampoorna raga will include all 7 notes in ascending or descending pitch. These pitches are called **arohanam** and **avarohanam**. Raga is the system of the song which generates its melody. There are 72 sampoorna ragas. A raga consists of **gamakas**. Gamakas are the ornamentation of Carnatic music. They are various activities that make the raga flow up and down in a song. They make a song engaging. The most recognized categorization of ragas is **Janaka raga** and **Janya raga**. Janaka is the parent raga from which Janya ragas are derived. Ragas are also classified based on the time of the day they are generally played.

##### Tala

Any song or musical composition cannot be created without beats and rhythm. This combination of beats and rhythm of music is known as **Tala**. There can be as many as 108 varieties of tala. Carnatic singers create tala by using hands and fingers periodically.

They do that to remember the required interval of time for each tala. **Adi tala**, which plays 8 beats in a cycle, is the most popular tala in Carnatic music. Basically, talas are comprised of 3 parts. **angas, dhrtam, and anudhrtam**.

Some complex talas have 2 more features, namely **plutam, guru, and kaakapaadam**. Some other popular talas of Carnatic music are –**Dhruva Tala, Eka Tala, Jhampa Tala, Matya Tala, Rupaka Tala, Tripata Tala**. The above-listed talas are composed of the **laghu, dhrtam, and anudhrtam**. Tala remains uniform throughout the Carnatic composition.

Carnatic music has many aspects – raga, rhythm, lyrical structure, lyrical content, etc. Every rasika has the option and right to enjoy any of these separately, selectively or collectively.







# THE INDIAN PENAL CODE

## – A SNAPSHOT

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

We are aware that the Indian Penal Code (IPC), 1860 is the substantive law which governs all criminal acts and the punishments for the offences.

The First Law Commission, chaired by Thomas Babington Macaulay in 1834, prepared the draft of the IPC drawing elements from the Napoleonic Code and the

Louisiana Civil Code. It has been amended several times and is now supplemented by other Acts. Its jurisdiction extends to the whole of India except the State of Jammu and Kashmir.

The IPC starts with an introduction and provides explanations and exceptions used in it, and then lays down a wide range of offenses and punishments.

### SOME CATEGORIES OF OFFENCES UNDER THE IPC AND CONSEQUENCES

Categories	Examples	Punishment
<i>Offences against the State</i>	Waging, abetting waging or attempting to wage war	death or life imprisonment; also liable to fine (Section 121 of the Code)
<i>Offences relating to the Army</i>	Harbouring deserters	imprisonment of up to two years or with fine or with both. (S. 136)





<i>Offences against public tranquillity</i>	Rioting	imprisonment of up to two years or with fine or with both. (S. 147)
<i>Offences relating to elections</i>	Bribery	imprisonment of up to one year or with fine or with both (S. 171E)
<i>Offences affecting the human body</i>	Dowry death	imprisonment for a term which shall not be less than seven years but which may extend to imprisonment for life. (S. 304B)
	Stalking	imprisonment of either description for a term which may extend to five years, and shall also be liable to fine (S. 354 D)
<i>Offences against property</i>	Theft	imprisonment of up to three years or with fine or with both (S. 379)
	Robbery	imprisonment of up to ten years and is liable for fine (S. 392)

#### **Rioting - Section 146 :**

Whenever force or violence is used by an unlawful group or by its member. **Every member is considered guilty.**

#### **Dowry death – Section 304B**

- The death of a woman is caused by any abnormal injury within seven years of her marriage and
- Soon before her death she was subjected to cruelty or harassment by her husband or any relative of her husband in connection with any demand for dowry, husband or relative shall be taken to have caused her death.

#### **Stalking – Section 354D - Any man who:**

- follows a woman or attempts to contact such woman to

develop personal interaction despite a clear indication of disinterest by such woman; or

- monitors the use of the internet, email, etc., by a woman is guilty of stalking.

However, it shall not amount to stalking if the man proves that:

- it was for the purpose of preventing or detecting crime and the man was entrusted with that responsibility by the State; or
- it was done under any law; or
- it was reasonable and justified.

#### **Robbery – Section 390**

The offender voluntarily causes or attempts to cause to any person death or hurt or wrongful restraint or fear of the same, while committing the theft or carrying away or attempting to carry away property obtained by theft.



# REFRESHER QUIZ!

**S**hravan and Gita came back from school, excited. “Grandpa, our teacher has selected us to lead the financial literacy project in our class.”

Grandpa smiled. “It is good to share your knowledge with others. Let us do a quick check of your understanding. Do you remember the first five topics we discussed? They listed out the topics.

“Good. Here is the quiz sheet that I had prepared. Check your understanding.”

## 1. Importance of Saving

**1.1 Why should we save money? Choose the correct answer/s.**

- a) For future needs
- b) For use in an emergency
- c) To show off to others

**1.2 Which of these statements is true?**

- a) We should save all the money we get without spending on anything
- b) We should save a part of our income for future use or emergency
- c) We should spend on needs and postpone our wants

**1.3 Why should we postpone our wants?**

- a) To save money to buy what we need
- b) To avoid buying things that we might not use
- c) To prevent wastage of money and resources
- d) All of the above

**1.4 Which of the following are needs (N) that are essential for living and which of these are wants(W)? Mark N or W against each item**

- |                                     |  |
|-------------------------------------|--|
| <input type="checkbox"/> Bread      | <input type="checkbox"/> Vegetables        |
| <input type="checkbox"/> Rice       | <input type="checkbox"/> Partywear clothes |
| <input type="checkbox"/> Pizza      | <input type="checkbox"/> Water bottle      |
| <input type="checkbox"/> Toothpaste | <input type="checkbox"/> School uniform    |
| <input type="checkbox"/> I Pad      | <input type="checkbox"/> I Phone           |
| <input type="checkbox"/> Ice-cream  | <input type="checkbox"/> Sports bicycle    |

## 2. Savings account for children

**2.1 What are the benefits of saving money in a bank? Choose the correct answer/s.**

- a) Your money is safe
- b) You can get back the money whenever you want
- c) You can earn interest on your savings
- d) All of the above

**2.2 Which of these statements are true regarding opening of bank accounts for children?**

- a) Banks can open minor accounts for children from age 0 to 18
- b) Children below ten years cannot open bank accounts
- c) Children aged 10 years and above can open bank accounts in their name and operate the account
- d) Banks issue debit cards to minor accounts

**2.3 Which of these documents are required for opening a bank account?**

- a) Aadhar card
- b) Birth certificate
- c) Photograph
- d) Library card
- e) Credit card

**2.4 Which of the following statements is true regarding interest on savings account?**

- a) Interest is the compensation provided by banks to customers for parting with their savings



- b) Simple interest method is followed to calculate interest
- c) Interest is calculated on the daily balances in the account
- d) All the above

### 3. The Power of compounding

- 3.1 What does the story of the mathematician who asked for a grain of rice for the first square and double the number of grains for each square tell us about the power of compounding?
- 3.2 How can we make the power of compounding work for our savings?
- a) Start saving at an early age
  - b) Save regularly
  - c) Allow your money to earn interest on interest
  - d) All the above
- 3.3 Mr. X has started a new business in your area. He invites deposits of money starting from ₹ 10,000, promises to return double the money in six months. Which of these responses is correct?
- a) Check if Mr. X has a good background and then deposit ₹ 10,000
  - b) Stay away from such businessmen because you might lose all your money
  - c) Invest your money in fixed deposit in banks
- 3.4 Your brother has been offered a part time job with a pay of ₹ 5000 per month. Which type of deposit would you recommend for him?
- 3.5 Your domestic help has saved cash ₹ 10,000. She wants to deposit the money for her daughter's future. (The daughter is aged 3 years.) Which deposit would you recommend?

### 4. Responsible Borrowing

Here are some scenarios where people borrow money. Identify what is wrong and why in each of these scenarios.

- 4.1 Mr. X borrows ₹ 30,000 from his friend for attending the wedding of his niece being held in a distant city. Mr. X is looking for a job as his company was shut down during COVID.



He is struggling to manage his household expenses but wants to show off at the wedding.

- 4.2 Mrs. Kamala approaches a moneylender for a loan of ₹ 20000 to start a home foods business.
- 4.3 Mr. Suresh has applied for a bank loan to start his business. He has estimated his initial investment to be ₹ 1,00,000. He finds that he is eligible for a loan for ₹ 5,00,000. He wonders if he can use the ₹ 4,00,000 to go abroad on a holiday.
- 4.4 Ms. Archana is a college student working part time in a shop on a monthly salary of ₹ 5000. She wants to buy the latest model I Phone on a credit scheme with a monthly repayment of ₹ 6000.

### 5. Financial Inclusion

- 5.1 What is financial inclusion? Why is it important for India's welfare?
- 5.2 What is Jan Dhan Yojana?
- 5.3 Who are Bank Mitras? What is their role in promoting financial inclusion?



# ANSWERS FOR QUIZ

## 1. Importance of saving

1.1 a, b

1.2 b, c

1.3 d

1.4 **Needs** – Bread, Rice, Toothpaste, I Pad, Vegetables, Water bottle, School uniform

**Wants** -Pizza, Ice-cream, Partywear clothes, I Phone, Sports bicycle

## 2. Savings account for children

2.1 d                      2.2 a, c d

2.3 a, b, c              2.4 d

## 3. The Power of compounding

3.1 When we start saving, the interest amount and the growth in value might be small. When we save regularly for many years, because of the compound effect of interest earning interest, our savings will accumulate to a huge value over time.

3.2 d

3.3 b, c

3.4 Recurring deposit. In this, customer can deposit a fixed amount every month for a fixed period and get the principal back with interest at the end of the deposit period.

3.5 **Sukanya Samridhi Yojana** – GOI's scheme for girl children.

## 4. Responsible Borrowing

4.1 **Rule:** Borrow only for productive purposes and not for consumption or social expenditure.

Mr. X is borrowing for a wedding which he will find difficult to repay as he has no income. This will only increase his debt burden.

4.2 **Rule:** Borrow from formal sources like Banks. Banks are transparent, trustworthy and will not charge exorbitant interest.

Mrs. Kamala is borrowing from a moneylender. Moneylenders charge very high interest that is calculated monthly, and they have hidden charges that increases the amount to be repaid. They also try to cheat borrowers and take over the assets pledged.

4.3 **Rules :** Borrow only for your needs and not for your wants.

Borrow for productive purposes

Borrow only what you can repay.

If Mr. Suresh borrows ₹ 500000 and spends 400000 on a holiday, how will he find the money to repay the loan?

4.4 **Rules:** Borrow for your needs, not your wants.

Borrow only within your repayment capacity.

Her monthly income is only ₹ 5000. How will she fund her studies and repay ₹ 6000? Solution: She can buy a basic smart phone for her needs.

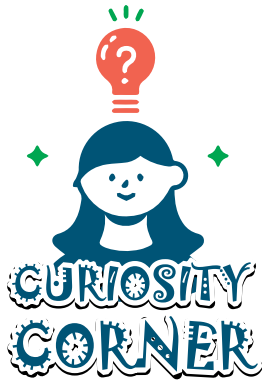
## 5. Financial Inclusion

5.1 Financial inclusion means availability of banking services at affordable rates to everyone in India – including people in the remotest locations.

5.2 **PMJDY** is a National Mission on Financial Inclusion encompassing an integrated approach to bring about comprehensive financial inclusion of all the households in the country. The plan envisages universal access to banking facilities with at least one basic banking account for every household, financial literacy, access to credit, insurance and pension facility. <https://pmjdy.gov.in/about>

5.3 **Bank Mitras** are business correspondents /agents of banks who would visit remote locations which do not have a bank branch.





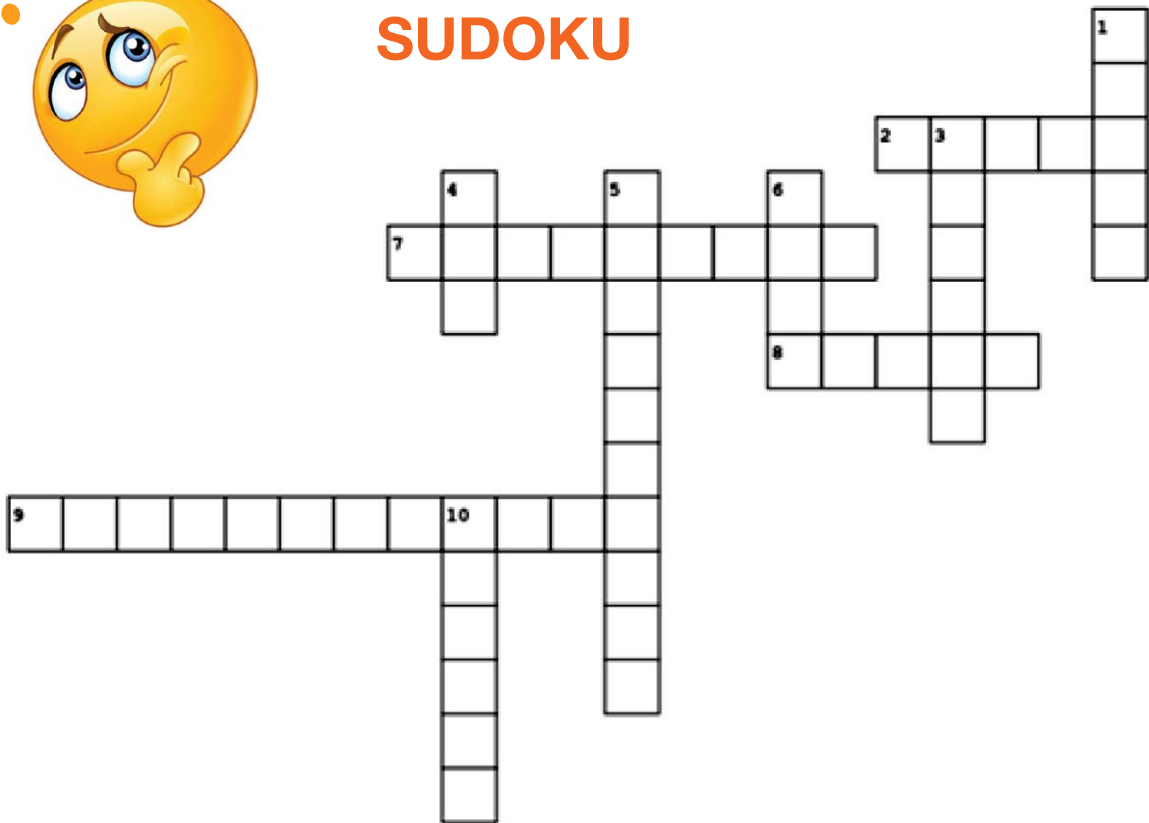
# SEASONAL FRUITS & VEGETABLES

**O**ur parents often stress about eating seasonal fruits and vegetables as these are filled with nutrients. These are suitable for health, boost immunity and keep unwanted infections at bay and aid our body to deal with the conditions outside and hence

make us feel more energized. For example, eating melons during summer keeps us hydrated and brings down the body temperature.

Another great thing is that we get them fresh from our local stores and need not rely on supermarkets for the packaged preserved ones.

## SUDOKU



### Across

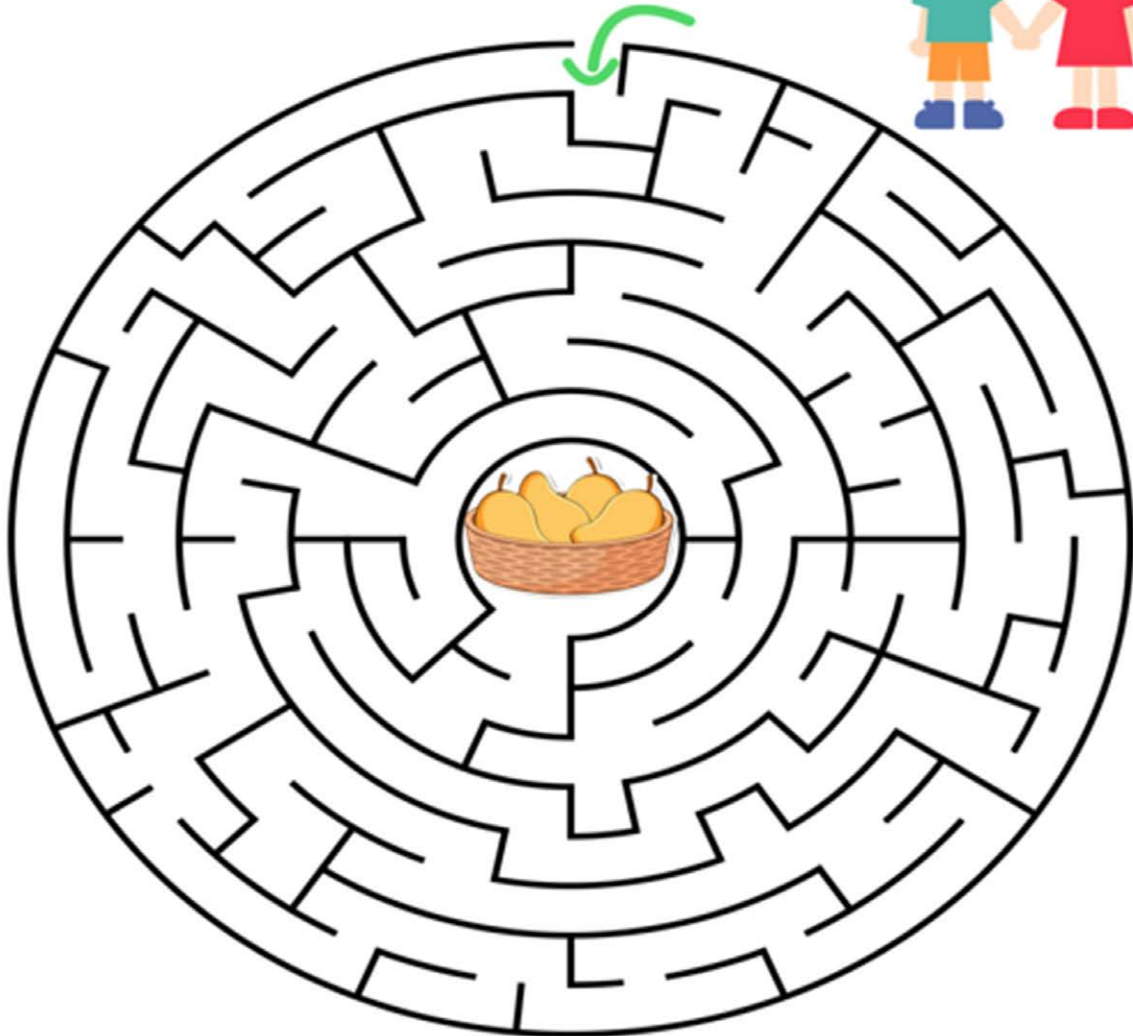
- Found in Maharashtra, this winter fruit is famous amongst the locals as Amsul.
- The best time to have this fruit is around March. It reduces inflammation and speeds metabolism.
- Everyone's favourite summer fruit.
- A winter fruit also known as Sitaphal.



## Down

1. A nutrient-rich and low-calorie fruit that takes care of your body during the monsoon season keeping gastric problems at bay.
3. A winter fruit rich in vitamin C and a convenient fruit which can be easily carried and peeled.
4. This fruit is a collection of inverted flowers that, if left untouched, would blossom from the inside out.
5. A low-calorie fruit, containing about 90% of water, sweet and refreshing; contains vitamins, minerals and antioxidants.
6. An early monsoon fruit with a high amount of vitamin C, known to be good for the skin.
10. Eating this fruit during summer is a real treat. It keeps the stomach healthy and full.

## The Treasure Hunt



Answers on page 60





**On July 4th, 1943, Netaji took charge of Azad Hind Fauj (Indian National Army - INA) from another exemplary freedom fighter Shri Rash Bihari Bose in Singapore.**

**S**elflessness, magnanimity, patriotism, determination and courage are great human values. When we find all these in one single human being, we adore her or him. This is why I revere Sri Subash Chandra Bose, our beloved 'Netaji'.

Since early childhood Netaji and his life had been my greatest inspiration. Just like the rats of the town of Hamelin, I used to follow him closely - reading, viewing and listening to anything centred around Netaji. Struggle and hardship characterised his life.

On July 4th, 1943, Netaji took charge of Azad Hind Fauj (Indian National Army - INA) from another exemplary freedom fighter Shri Rash Bihari Bose in Singapore. Then on, INA marched towards our

motherland crushing Britishers in Burma and Andaman & Nicobar Islands. Netaji himself also hoisted the Tricolour flag of Indian Independence on 30th December 1943, in Gymkhana Club at Port Blair. However, the biggest success came for us when INA soldiers set their foot on the pious land of mainland 'Bharat'.

After a long tussle, INA won the majority of Nagaland and Manipur. On 14th April 1944, Colonel







Shaukat Malik of INA hoisted the Tricolour for the first time on Indian soil in Moirang, Manipur.

My dream of being in Moirang came true this year in April. I travelled to Imphal from Chennai via Guwahati. Moirang is a small town in Bishnupur district barely 40 km away from Imphal. I took a bus from Ima Keithel (mother's market –where the sellers can only be women; around 5,000 vendors) for Moirang. The scenic journey lasted an hour. I struck up a conversation with fellow local travellers and got to know that Moirang used to be an independent kingdom, small yet the most powerful kingdom of Manipur over the past centuries. Owing to the bravery of the people, even the Burmese king used to pay them money and used to have friendly ties. No wonder this place hosts our first tricolour on India's mainland.



The bus dropped me off 30 meters away from the INA Martyrs' Memorial at Kumam leikai, Moirangthem leikai, Moirang. Here 'leikai' means small village or can be used interchangeably for a locality.

flying high. I was at the same spot where the historical national flag was hoisted. I made a 'sashrang pranam' at the feet of the national flagpole. I offered my respects to the ultimate sacrifice of the freedom fighters.



The entire complex is being managed well by Manipur Government. Yet I could sense the enthusiasm and pride the locals have for the memorial. Entry is free. The first thing that struck me was the statue of Netaji.

It is because of their selflessness today that we breathe in free India. I rubbed this holy soil on my forehead. I had taken a small jar in which I collected a bit of the holy soil. Our entire nation is holy, yet this specific soil is special and where sacrifice, liberty and bravery are exhibited to the maximum.

**Unreleased postage stamps of the Azad Hind**

However, before offering my 'pranam' I glanced at the Tricolour

Next, I paid my pranam to my idol Netaji. I sat there wondering about his magnetic personality which inspired thousands of women and men to give up all for the sake of freedom. He was truly a national leader respected from Kabul to Singapore, Kashmir to Tamil Nadu by Muslims, Buddhists, Sikhs and Hindus.





I then spotted the memorial with INA's motto embedded '*Ittehad, Itmad aur Qurbani*' i.e., Unity, Faith and Sacrifice.

Then I headed to the INA Museum, which charges a minimal ₹ 10 per person.

The INA Museum at Moirang displays some wartime relics and rare photographs. I could find World War II era stretchers, cannon balls, bullets, helmets, maps, binoculars, and uniforms. It took me almost an hour at the museum reading letters, getting to know about local INA heroes with special mention for Shri Mairembam Koireng Singh.

I was amazed at the number of women freedom fighters from Manipur. Courage and bravery are independent of gender.

I visited the memorial on 12th April; officials were busy getting ready for the annual event to be held on 14th April. I was searching for a souvenir to take back to Chennai. Except books nothing was for sale.

As I came out of the complex, after paying my respect to Netaji and his brave INA soldiers, I felt Netaji has bestowed upon me this great experience of spending a couple of days in the North-east that strengthens my conviction that we are all Indians.

We might differ in terms of looks, languages and food habits religious custom and worship. Yet we bow to the tricolour, sing the same national anthem with pride and respect. Our Manipuri brothers and sisters are simple and kind-hearted. To witness the hardship of INA soldiers and also the diversity our motherland has, one must visit Moirang. I also visited a World War II peace museum by the Japanese government in Nambol and a picturesque 'Sadhu-Chiru' waterfall. With such travel, one's mind would certainly be elevated with a clear understanding of our rich history. Regular life would be with fewer complaints and love for the motherland and fellow Indians would certainly increase.

Jai Hind !!

## ANSWERS

of page 54 & 55

### Crossword

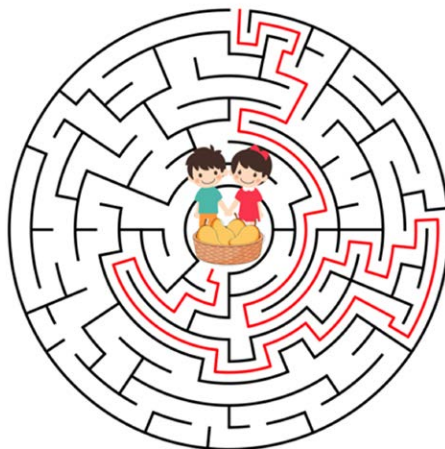
#### Across:

2. Kokum
7. Pineapple
8. Mango
9. Custard Apple

#### Down:

1. Jamun
3. Orange
4. Fig
5. Water melon
6. Plum
10. Papaya

### Treasure Hunt





## Unsung doll maker from Manipur **Konsam Ibomcha Singh**

Today, he is the only person in his region to make this style of dolls.



**K**onsam Ibomcha Singh of Imphal East, Manipur, was born to National Awardee parents. His father, Konsam Tona Singh had won the award in the Dolls and Toys category and mother Konsam Ongbi Gambhini Devi for the Kauna Craft. It was no surprise then that Ibomcha decided to adopt his father's craft of the century-old doll-making technique.

The beauty of Ibomcha's dolls is that every item is handmade which are known as *Laiphadibi* or *Laidhibi*.

In the Manipuri language of Meitei, 'Lai' means God, 'Phadi' means old rags and 'Bi' is attributed to the feminine gender. There is no mass production or moulds used in the making of these dolls. Each doll takes at least a week to make. Today, he is the only person in his region to make this style of dolls.

Konsam changed the traditional doll-making style by replacing the rags with dried grass that are formed into shape with thin wires glued to cloth.

This is held tight by smearing with a paste of locally sourced clay and a fine powder made of grass. They are then dried in the sun.

The dried dolls are smoothed to get a uniform surface. He then paints them using acrylic paints. A single colour is used to paint the body and red and black, among other colours, are used to paint the facial expressions.

The last step is dressing the doll and this is when his wife, Chandrima Konsam, steps in, to stitch richly embellished attires using the fabric with traditional, region-specific weaves, depending on the doll. She makes tiny ornaments like necklaces, garlands, hair and head decorations too.

The city was included in the Smart Cities Mission under the Ministry of Housing and Urban Affairs. This has immensely helped the handicrafts sector in the state. Ibomcha now gets bulk orders from the State Government. They present his dolls as gifts to their guests or display them in the tourism department for sale.

# BARREN ISLAND

**Having a diverse marine life on board, Barren Island is made open for scuba diving which attracts large number of tourists.**

**V**olcano owes its name to the Roman God of fire and metal work, Vulcan. Ancient Romans believed that the mountain that emitted fire and molten materials was the workshop of Vulcan.

Volcano is a vent or a hole in the earth's crust through which hot molten materials from the interior parts of the earth are emitted. An active volcano is one which erupted recently and there is a possibility that it may erupt soon. There are approximately 500 active volcanoes in the world today.

The only active volcano in India is located in Barren Island, an uninhabited land mass in the Andaman and Nicobar group of islands. The first recorded eruption of this volcano dates back to 1787. Since then, it has erupted more than ten times, with the most recent one being in 2020.

This island is about three kilometres in diameter and has a big crater of the volcano, about half a kilometre away from the shore. It can be visited by chartering boats and with the permission of Forest Department. Foreign nationals are restricted to be on-board the vessel only and landing ashore is not allowed.

Having a diverse marine life on board, this island is made open for scuba diving which attracts large number of tourists.

Each and every region of India is unique. Andaman and Nicobar islands provide a paradise to nature lovers. This region has its own rich and unique physical and biological environment.



# Veerabhadra Temple Lepakshi

A remarkable feature is the famous 'hanging pillar' that does not touch the temple floor at all!

The Veerabhadra Lepakshi temple located at Lepakshi in Anantapur, Andhra Pradesh is a 500-year-old marvel of 16<sup>th</sup> century Indian architecture. It is built on a tortoise-shaped rocky hill. The temple was built by Virupanna Nayaka and Viranna. Ranga Mantapa, the Ardhamantapa and the sanctum sanctorum. The main temple has three parts, the assembly hall known as Mukha Mantapa or Natya Mantapa or Ranga Mantapa, the Ardhamantapa and the sanctum sanctorum. Replete with idols and

sculptures of gods, goddesses, musicians and dancers, the temple is a marvel. These include a 24-feet-by-14-feet fresco of the fourteen avatars of Shiva.

A remarkable feature is the famous 'hanging pillar' that does not touch the temple floor at all! There is a small gap between the temple floor and base of the pillar and it is possible to pass thin objects such as a sheet of paper or a piece of cloth from one side to the other - undoubtedly an engineering wonder and an artistic masterpiece!

### Highlights

- Hanging pillar of Lepakshi
- Largest monolithic Nandi in India (9.1 m long 6.1 high)
- Largest monolithic Nagalinga in India
- Carved Ganesha idols
- 100 pillared unfinished kalyana mantapa
- Durga Padam
- Eyes of Virupanna
- Mural paintings which include the largest portrait painting in the world



## DO YOU KNOW ?

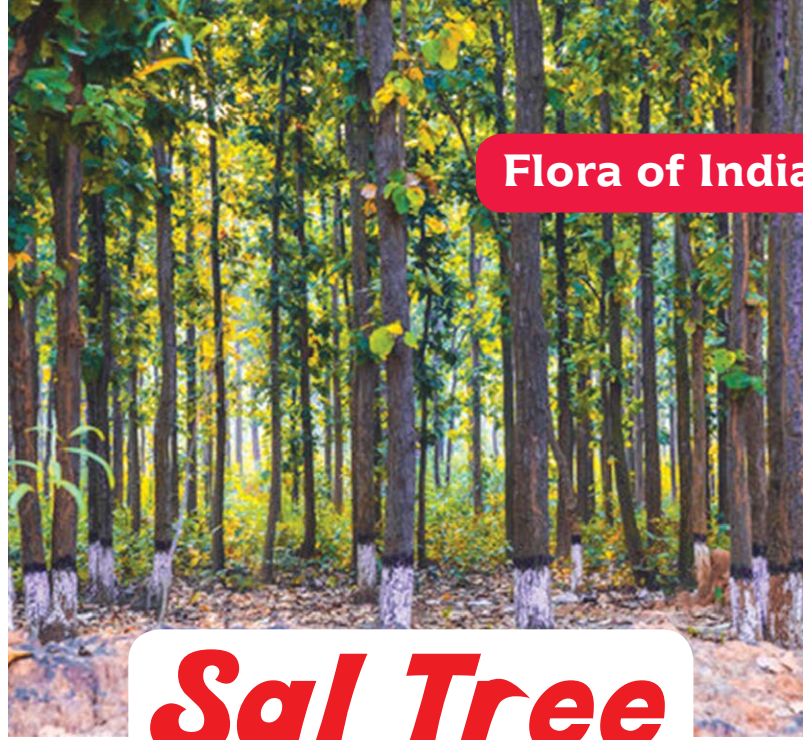
- The fresco on the roof is Asia's largest, measuring 23 feet X 13 feet.
- **Kurmasailam** means tortoise hill in Telugu.
- As per local legend, this place is the spot where Jatayu fell after a fight with Ravana when Sita was being abducted by the latter. Rama, on reaching the spot, compassionately said, "Lepakshi" which means "Rise, O, bird!"



### HOW TO GET THERE

- ▶ **Nearest Railway Station:** Hindupur railway station.
- ▶ **Nearest Airport:** Bengaluru airport.





# Sal Tree

**S**al Tree, *Shorea robusta*, is an evergreen tree growing up to 50 m in height. It is indigenous to India and roughly one-eighth of the total forest area of India is covered by Sal trees, particularly in the central and north-eastern parts up into the Himalayan foothills.

The tree has a great cultural significance, particularly amongst Buddhists. It is said that Buddha was born and died under the Sal tree.

It is evergreen in wetter areas and dry-season deciduous in drier areas. They are found in Bangladesh; Bhutan; China; India; Nepal; Pakistan, Asia, Australia, Burma, Himalayas, India, Myanmar, North-Eastern, South-Eastern Asia, Sikkim.

**Flowering:** April-May. Also known as Sakhua in northern India, it is the state tree of two Indian states - Chhattisgarh and Jharkhand.

The tree has a great cultural significance, particularly amongst Buddhists.



Younger tree has an elongated crown but as the tree grows older, the crown becomes more rounded. It is moderate to slow growing.



The wood is hard, heavy, very durable and highly resistant to termite attack. It is used in hydraulic engineering, ships and railway cars, source of fuel. The tree is a source of lad dhuna, a whitish, aromatic, transparent resin used to caulk boats and ships and as incense. The resin is also valued medicinally as treatment for dysentery, gonorrhoea, boils and tooth aches. Its high resin content makes it difficult to plane and turn.





The leaves are oval, leathery and taper to the tip with rounded or heart shaped base. They are used as a poultice for swollen body parts, making plates, cups, and as wraps. Leaf juice is used in the treatment of dysentery.



The flowers are yellow and small occurring in large numbers in the axils of the leaves or at the ends of branches.



The fruits are oval, pale yellowish or green, hairy, comprising an oval seed. They are occasionally consumed as food.



The seeds are roasted, boiled, or ground into flour. It is also a source of sal butter, an oil used in cooking and as substitute for cocoa butter. Seed oil is used for lamps and as treatment for various skin conditions.

### Note:

Sal tree (*Shorea robusta*) is often confused with Cannon Ball Tree (*Couroupita guianensis*)

### Scientific classification

**Kingdom:** Plantae

**Scientific name:** *Shorea robusta*

**Family:** Dipterocarpaceae

**Order:** Malvales







# *A spicy way to good health*

**I**ndia, the “Land of Spices” has a flourishing trade history from as early as 1500 BC. The rich availability of medicinally important spices in our country such as turmeric, black pepper, cardamom, cinnamon etc., had great cultural and economic significance. India was rightly termed as the “Pharmaceutical capital” of ancient times due to its well-established medicinal practices that essentially had spices as their main ingredients.

The use of spices has been incredibly important throughout history. Many were celebrated for their medicinal properties, well before culinary use. Europeans came to India travelling for days, crossing oceans, looking for spices – not only because it made food tastier – but because of its intense medicinal properties.

The turmeric plant requires a considerable amount of annual rainfall for survival and thrives in temperatures between 20°C and 30°C. The plants are known for their characteristic long, oblong leaves and height; they usually

grow up to a height of 1m. Annual gathering of rhizomes is followed by reseedling of rhizomes in the following season. The tuberous rhizome from which turmeric is derived has a rough and segmented skin. Dried turmeric rhizome can be ground into a yellow powder with a pungent flavour. Approximately 133 species of *Curcuma* have been identified across the world. Each has its own common name in the community and is used in a variety of pharmaceutical formulations.

India is a leading producer and consumer of nearly the world’s entire turmeric crop. Indian turmeric is regarded as the best in the world due to its inherent qualities and high content of the important bioactive compound curcumin. The world’s largest producer and the most important trading centre of turmeric is Erode, a city in the South Indian state of Tamil Nadu. Erode is also referred to as “Yellow City” and “Turmeric City.” Sangli, a Maharashtrian city, is second only to Erode in size and importance as a turmeric production and trading centre.



**The world’s largest producer and the most important trading centre of turmeric is Erode, a city in the South Indian state of Tamil Nadu.**





Two major types



**Curcuma longa (regular turmeric)**  
 - Used for cooking

- Commonly available
- More curcuminoids
- Acrid yet sweet taste
- Flowers don't bear seeds
- Root based culture fast

**Curcuma Aromatica (Wild turmeric) / Jangli Haldi जंगली हल्दी**  
 - Used for Cosmetic purpose

- Endangered species
- More curcumin
- Bitter taste
- Flowers bear white seeds
- Root based culture slow



- can protect against cancer due to anti-oxidant properties
- boosts the immune system and improves longevity
- has anti-diabetic effects
- protects the heart and helps in lowering cholesterol
- protects against nerve degeneration and developments of aging related diseases such as Parkinson's disease and Alzheimer's when consumed regularly.
- helps against fatty liver

Curcumin is the active ingredient of Turmeric and already protected by several patents in US and Europe.

Turmeric helps in improving texture of skin, smoothens it. We can add a pinch of turmeric to the water and use it for bathing or washing hands. These were sincerely practiced by many during the COVID-19 pandemic.

**Turmeric helps in improving texture of skin and smoothens it.**

**Why is Turmeric called the golden spice?**

Curcumin exerts its effects on all the tissues and organs and some of it are mentioned below:

- has anti-septic properties and can help against infections
- helps in wound healing and soothing of burns

# Remembering 'Padma Vibhushan' Field Marshal



## **SAM MANEKSHAW JI**

**on his Birth Anniversary**

**3<sup>rd</sup> April**

**The Man behind India's victory against  
the war with Pakistan in 1971**

“

Professional knowledge and professional competence are the main attributes of leadership. Unless you know, and the men you command know that you know your job, you will never be a leader.

# TURNING INDIA INTO THE GLOBAL HUB OF ELECTRONIC MANUFACTURING

Union Cabinet approves programme for development of sustainable semiconductors and display ecosystem



Incentives worth **Rs 2.3 lakh crore** to position India as global hub for electronics manufacturing



**Rs 76,000 crore** approved for development of semiconductors and display manufacturing ecosystem



Setting up of **India Semiconductor Mission (ISM)** to drive this sector



To contribute to US \$1 trillion digital economy as a part of US \$5 trillion GDP by 2025 - 2026



Production target worth ₹9.57 lakh crore over the next 20 years



Exports expected to touch ₹5.15 lakh crore over the next 20 years



India Semiconductor Mission (ISM) to implement policy roadmap

