

Iron in Tamil Nadu

❖ Context

- The Tamil Nadu CM has stated in the TN assembly that it has been established that Tamils who lived **4200 years ago** were aware of iron.

❖ Key Highlights

- The carbon dating of **excavations** from **Mayiladumparai** in Krishnagiri, TN, 100 km south of Bengaluru, **establish the age of findings (iron tools) to 2172 BCE**.
- The cultural material of the site dates between **Microlithic (30,000 BCE) and early historic ages (600 BCE)**.

❖ Timeline Revised

- Before this, the earliest evidence of iron use in Tamil Nadu was **1500 BCE from Thelunganur and Mangadu, near Mettur**.
- With this, the time of earliest use of iron in India has also been revised from 1900-2000 BCE. Such revisions have also been made in the past with excavations.

Name of the site	Date
Ahar, Rajasthan	1300 BCE
Bukkasagara, Karnataka	1530 BCE
Raipura, mid-Ganga valley	1700-1800 BCE
Malhar, Varanasi and Brahmagiri, Karnataka	1900-2000 BCE

❖ Significance Of Iron In History

- **Iron is not known to have been used in the Indus valley**, from where the use of copper in India is said to have originated.
- The **copper is brittle**. Thus, it would have been difficult to clear dense forests and bring land under agriculture.
- The invention of iron tools led to the **production of agricultural tools and weapons**.
- With **use of iron**, **deforestation** took place, land was brought under cultivation, surplus production led to specialisation of professions and sophistication of economy and thus development of civilisations.

News in Between the Lines

Plants Grown In Lunar Soil



❖ Context

- For the first time, scientists have grown plants in **soil** from the moon **collected by NASA's astronauts during the Apollo 11, 12 and 17 missions**.

❖ Background

- In a paper published in the journal **Communications Biology**, **University of Florida researchers** showed that plants can successfully sprout and grow in lunar soil.
- Their study also investigated how plants respond biologically to the Moon's soil, also known as **lunar regolith**, which is **radically different from soil found on Earth**.
- This work is a **first step towards one day growing plants for food and oxygen on the Moon** or during space missions.
- The breakthrough comes as NASA is working to return humans to the moon, specifically the south pole by 2025, under the **Artemis Program**.
- The scientists only had **12 grams of lunar soil** to do this experiment.
- The plant grown was **Arabidopsis** which is widely used in the plant sciences because its genetic code has been fully mapped.

❖ Findings

- Scientists have inferred that the **plants perceive the lunar soil environment as stressful** as at the genetic level, the plants were pulling out the tools typically used to cope with stressors, such as salt and metals or oxidative stress.
- Further, the researchers also found that the plants with the **most signs of stress** were those grown in what lunar geologists call **mature lunar soil**.
- These mature soils are those **exposed to more cosmic wind**, which alters their makeup.
- On the other hand, plants grown in comparatively less mature soils fared better.

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Pathways Language Model (PaLM)

❖ Context

- Google has unveiled a new model for natural language processing and AI.

❖ Key Highlights

- It follows **Pathways AI architecture** where a language model is trained to learn how to solve problems that it hasn't necessarily seen before.
- It is the **company's largest model to date** and **trained on 540 billion parameters**.
- PaLM was trained using a combination of English and multilingual datasets that include high-quality web documents, books, Wikipedia, conversations, and GitHub code.
- The model can **explain a joke or solve a maths word problem**.
- The company ascribes the capability of the model to a breakthrough in natural language processing research which is being called **chain of thought prompting**.
- It allows language models to break down complex multi-step problems into a sequence of steps.

Gatishakti Sanchar



❖ Context

- The Department of Telecommunication launched "**GatiShakti Sanchar**" Portal for **Centralised Right of Way (RoW) approvals**.

❖ Key Highlights

- The portal has been developed by the **Madhya Pradesh State Electronics Development Corporation**, keeping in view the vision areas of the National Broadband Mission. **National Broadband Mission (NBM)** was set up by the Department of Telecommunication (DoT) in December, 2019, to facilitate **universal and equitable access to broadband services across the country**, especially in rural and remote areas.
- The portal will enable applicants form various **Telecom Service providers (TSPs)** as well as **Infrastructure providers (IPs)** to apply at a common single portal for **Right of Way permissions** to lay down Optical Fibre Cable and for erecting mobile towers to State/UT Governments and local bodies.
- For effective monitoring of RoW applications across the country, the portal even comes fitted with a **dashboard showing State and District wise pendency status**.

❖ Benefits

- The portal has already **brought down the time taken for such approvals from nearly 100 days to around 22**.
- As it smoothen the process of RoW permissions as well as faster approvals; it is believed to **facilitate easy rollout of 5G services**, in which a Base Transceiver Station (BTS) is installed at very short intervals.
- **Fast laying of more Optical Fibre Cable** and thus will accelerate fiberization.
- **Increased tower density** which will enhance connectivity and improve the quality of various telecom services.
- **Better Broadband speed** across the country.

Stablecoins



❖ Context

- The sharp crash in Luna, the sister cryptocurrency of **algorithmic stablecoin TerraUSD (UST)** has sent shockwaves throughout the cryptocurrency market.

❖ What are they?

- **Stablecoins** are **tokens pegged** to the value of a **government backed currency** (such as the US dollar) or **commodities** like gold or silver.
- Tether (USDT) and USD Coin (USDC) are the two leading stablecoins. They largely trade around \$1 per token which gives investors some security in highly volatile market situations.
- An **Algorithmic stablecoin** is **however different** from a stablecoin. Instead of being pegged to a government currency or commodity, it is **pegged to a sister token** and **relies on an algorithm to stabilise its value**.

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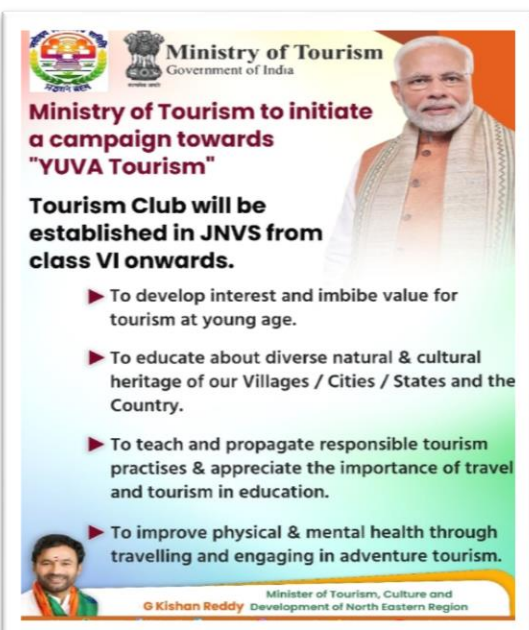
❖ What Happened?

- Terra was pegged to sister token Luna. Its value was being kept close to a dollar.
- For this purpose, the algorithm encourages investors to take advantage of price changes between Terra and Luna.
- If Terra's price falls below \$1, traders can "burn" the coin (permanently remove them from circulation) in exchange of Luna and if it falls above \$1, they can create Terra in exchange of Luna. However, when Terra was depegged from \$1 to around \$0.45, it led to tremendous sell pressure in Luna, which led to the crash in cryptocurrency from \$110 to a few cents **wiping out \$40 BN of wealth**.

❖ Significance

- The experts have likened the crash to be **as severe as the 2008 financial crisis**. The near collapse of these stablecoins, which were considered as comparatively safer investment bets within the crypto universe, has also prompted authorities and regulators to call for stricter regulation.

YUVA Tourism



❖ Context:

- The Ministry of Tourism has initiated establishment of '**YUVA Tourism Clubs**' as part of the 'Azadi ka Amrit Mahotsav' celebrations. According to the ministry, the **YUVA Tourism Clubs aims to nurture and develop young ambassadors of Indian tourism** who would become aware of tourism possibilities in India, appreciate our rich cultural heritage and develop an interest and passion for tourism.

❖ Key Highlights:

- As a part of the initiative, the **Central Board of Secondary Education (CBSE)** has come forward to support the initiative of the Ministry of Tourism and issued instructions to all CBSE affiliated schools regarding formation of Yuva Tourism Clubs.
- **Aim:** Yuva Tourism clubs that are being set up in various schools will promote national integration and build on the Prime Minister's **vision of Ek Bharat Shreshtha Bharat**. Reddy further added that through the initiative students will be aware of domestic destinations and equipped with the tools to promote the tourism sector. The clubs will help children to be more aware about their states and neighborhood along with the cultural aspects.

❖ Significance:

- Young members would gain exposure to the **rich diversity of India**, and its **civilizational values**. The clubs would also enable learners to appreciate the importance of travel and tourism.
- It will sensitize learners to various elements of travel and propagate **responsible tourism practices**, and spread awareness about tourism opportunities.
- It will encourage learners to be skilled professionals and entrepreneurs in the **hospitality and tourism sector**.

7 years of PMJJBY, PMSBY, and APY

❖ Context

- **Pradhan Mantri Suraksha Bima Yojana (PMJJBY), Pradhan Mantri Jeevan Jyoti Bima Yojana (PMSBY), and Atal Pension Yojana (APY)** recently completed seven years of providing social security net.

❖ Key Highlights:

- The schemes were launched by Prime Minister on 9th May 2015 in Kolkata, West Bengal. These schemes have been successful in **providing affordable insurance and security to people**. These **three social security schemes** are dedicated to the **welfare of the citizens, recognizing the need for securing human life from unforeseen risks or losses & financial uncertainties**.
- In order to ensure that the people from the **unorganized section** of the country are **financially secure**, the Government launched two **insurance schemes: Pradhan Mantri Jeevan Jyoti Bima Yojana & Pradhan Mantri Suraksha Bima Yojana & introduced Atal Pension Yojana** to cover the exigencies in the old age.

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❖ About PMJJBY

- It is a one-year life insurance scheme renewable from year to year offering **coverage for death due to any reason**.
- **Eligibility:** Individuals in the age group of 18-50 years having a savings bank or a post office account are entitled to enroll under the scheme. People who join the scheme before completing 50 years of age can continue to have the risk of life covered up to age of 55 years upon payment of premium.
- **Benefits:** Life cover of Rs. 2 Lakh in case of death due to any reason against a premium of Rs. 330/- per annum.
- **Achievements:** "Under PMJJBY, a cumulative number of 12.76 crore persons have enrolled since inception for life cover and families of 5,76,121 persons have received claims for Rs. 11,522 crore under the scheme.

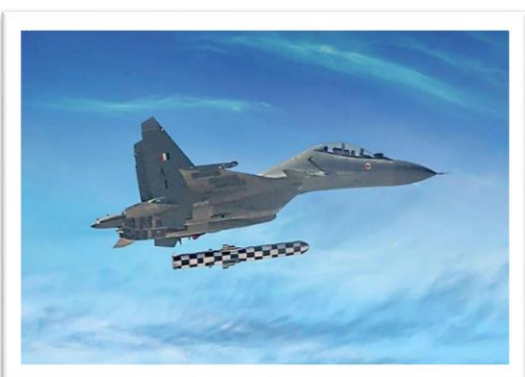
❖ About PMSBY

- **Background:** It is a one-year accidental insurance scheme renewable from year to year offering coverage for death or disability due to accident.
- **Eligibility:** Individuals in the age group of 18-70 years having a savings bank or a post office account are entitled to enroll under the scheme.
- **Benefits:** Accidental death cum disability cover of Rs.2 lakh (Rs.1 lakh in case of partial disability) for death or disability due to an accident.
- The premium that should be paid is Rs 12 per annum.
- **Achievements:** 28.37 crore enrollments.

❖ About APY

- **Background:** The **Atal Pension Yojana (APY)** was launched to create a universal **social security system** for all Indians, especially the poor, the underprivileged and the workers in the **unorganised sector**.
 - It is an initiative of the Government to provide financial security and cover future exigencies for the people in the unorganized sector.
 - **APY** is administered by **Pension Fund Regulatory and Development Authority (PFRDA)** under the overall administrative and institutional architecture of the **National Pension System (NPS)**.
- **Benefits:** Subscribers would receive the **guaranteed minimum monthly pension** of Rs. 1000 or Rs. 2000 or Rs. 3000 or Rs. 4000 or Rs. 5000 at the age of 60 years, based on the contributions made by the subscriber after joining the scheme.
- **Disbursement of the Scheme Benefits:** The monthly pension is available to the subscriber, and after him to his spouse and after their death, the pension corpus, as accumulated at age 60 of the subscriber, would be returned to the nominee of the subscriber.
- **Eligibility:** APY is open to all bank account holders in the age group of 18 to 40 years and the contributions differ, based on pension amount chosen.
- **Achievements:** More than 4 crore individuals have subscribed to the scheme.

Extended BrahMos



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❖ Context

- **IAF test-fires** extended-range BrahMos from **Sukhoi-30 fighter** for the first time.

❖ Key Highlights

- Two months before, the same was tested from a naval ship, stealth destroyer, INS Chennai. BrahMos is an **indigenously manufactured missile** notably being the fastest supersonic cruise missile in the world, jointly developed with Russia.
- It is a joint-venture between the Indian **Defence Research and Development Organisation (DRDO)** and the Russian Federation's NPO Mashinostroyeniya, who together have formed BrahMos Aerospace.
- The name BrahMos is a portmanteau formed from the names of two rivers, the **Brahmaputra of India and the Moskva of Russia**. The range of BrahMos was earlier around 290 km, which, with the new version, has reached around 350 km. It can be launched from surface (both land & sea), air & submarine. The extended range capability of the missile coupled with the high performance of the **Su-30MKI aircraft** gives IAF a strategic reach & allows it to dominate future battlefields.

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