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Current affairs summary for prelims

27 April, 2024

Supreme Court denies demand for 100% VVPAT slip verification

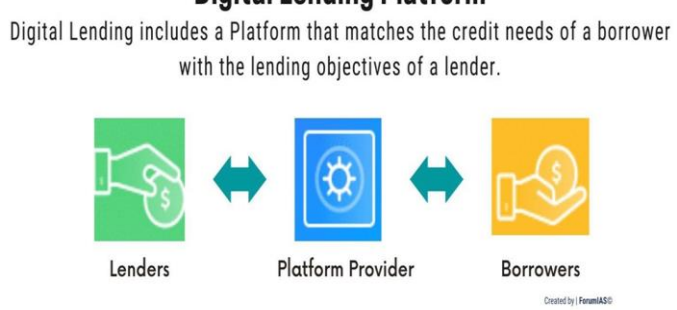
Context: *On Friday (April 26), the Supreme Court dismissed the call for complete verification of Voter Verified Paper Audit Trails (VVPATs) in Indian elections.*

- **Case Background:**
  - In March 2023, the Association for Democratic Reforms filed a petition urging the Supreme Court to ensure free and fair elections by cross-verifying Electronic Voting Machines (EVMs) with Voter Verified Paper Audit Trails (VVPATs).
  - The ADR proposed using barcodes on VVPAT slips for expedited verification.
- **VVPAT Machine Functionality:**
  - Attached to the EVM's ballot unit, the VVPAT machine provides visual verification of a voter's choice by printing a slip of paper displaying the candidate's serial number, name, and party symbol.
  - Voters have seven seconds to verify their vote before the slip falls into a compartment underneath.
- **Introduction of VVPATs:**
  - The idea of the VVPAT machine emerged in 2010, followed by field trials and feedback from political parties.
  - After necessary amendments and trials, VVPATs were first used in the Noksen Assembly constituency of Nagaland in 2013, with full adoption by June 2017.
  - Verification Procedure: Initially, one randomly selected polling station per Assembly constituency counted VVPAT slips, later increased to five polling stations per Assembly seat following a Supreme Court judgment in April 2019.
- **Legal Cases Surrounding VVPATs:**
  - Legal cases, including Subramanian Swamy vs Election Commission of India, have underscored the necessity of a paper trail for transparent elections.
  - Chandrababu Naidu's petition in 2019 led to the Supreme Court mandating the counting of VVPATs in five polling stations per Assembly seat.
- **EC's Position on VVPAT Verification:**
  - The EC has cited logistical challenges and potential delays in results declaration as reasons for resisting widespread verification.
  - Opposition parties, advocating for increased transparency, have called for anywhere from 50% to 100% verification of VVPAT slips.

Draft norms for Web aggregators of loan products

Context: *The RBI suggests banks and NBFCs ensure their loan service providers offer borrowers a digital view of available loan offers from willing lenders.*

- **RBI Guidelines for Loan Service Providers (LSPs):**
  - The RBI proposed that LSPs provide borrowers with a digital overview of available loan offers, including lender details, loan amount, tenor, annual percentage rate, and other key terms for fair comparison.
  - These guidelines aimed to enhance transparency and ensure borrowers had prior information about potential lenders.
  - While LSPs could use any mechanism to confirm lender willingness, they were required to adopt a consistent approach disclosed on their website.
  - A link to the key facts statement (KFS) for each regulated entity was mandated.
  - The content displayed by LSPs was required to be unbiased, avoiding the promotion of specific lenders or deceptive practices.
  - LSPs acted as agents of regulated entities (banks and NBFCs), carrying out various functions in customer acquisition, underwriting support, servicing, etc., in line with RBI outsourcing guidelines.
  - Many LSPs offered aggregation services for loan products, matching borrowers with lenders through digital platforms, often without upfront disclosure of lender identity.
- **Digital Lending Landscape:**
  - **Definition:** Digital lending involved lending through web platforms or mobile apps using technology, employing automated technologies and algorithms for various processes such as customer acquisition, credit evaluation, decision making, authentication, disbursements, and recovery.



  - **Partnership Dynamics:** Lending Service Providers (LSPs) partnered with Non-Banking Financial Companies (NBFCs) to disburse credit through their platforms, creating multi-sided platforms.
  - **Growth Trends:** Digital lending experienced rapid growth in India, increasing from a volume of US$ 9 billion in 2012 to nearly US$ 110 billion in 2019, with projections to reach around US$ 350 billion by 2023.
  - **Industry Players:** This sector was predominantly occupied by fintech startups, neo-banks, and NBFCs.

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- **ustomer Base:** The customer base primarily consisted of small borrowers without documented credit history, typically not served by traditional financial institutions.
- **Product Offerings:** Products offered focused on short-term loans, particularly those with tenures of less than 30 days.
- **Entry of Commercial Banks:** Commercial banks also entered the digital lending space, either independently or through partnerships with NBFCs to leverage synergies.

Advanced Composite Solar Sail System (ACS3)

Context: *Recently, NASA achieved a successful launch of its Advanced Composite Solar Sail System spacecraft from New Zealand.*

- NASA's Advanced Composite Solar Sail System (ACS3) mission is a technology demonstration aimed at assessing solar sail structures for future small spacecraft undertaking deep space missions with extended duration and low-thrust propulsion requirements.
- Launched on April 23, 2024, ACS3 will unfurl a sail approximately the size of a small apartment from a spacecraft comparable in size to a toaster oven.
- The core of ACS3 is a CubeSat, adhering to standardized dimensions, and incorporates four 7-meter-long deployable composite booms.
- Similar to how a sailboat utilizes wind in a sail, solar sails utilize sunlight pressure for propulsion, negating the need for conventional rocket propellant.
- Previous space missions have demonstrated the capability of small spacecraft to alter their orbits using solar sails, expanding their potential applications.
- Future solar sail missions will necessitate larger sails and lighter materials to optimise performance.
- CS3 employs lightweight carbon fibre sail booms instead of traditional metal booms.
- This marks the inaugural space test of this technology.

Solar sails

➢ Solar Sail Propulsion:

- Solar sails utilise radiation pressure from sunlight on large surfaces for spacecraft propulsion.
- Proposed since the 1980s, various spaceflight missions have aimed to test solar propulsion and navigation.
- The first spacecraft to utilise this technology was IKAROS, launched in 2010.

➢ Analogous to Sailing Boats:

- Solar sailing can be likened to sailing boats, where sunlight's force on a large surface resembles wind on a sail.
- Beam sailing, using high-energy laser beams, could provide greater force compared to sunlight.

➢ Types

- Reflective Solar Sails: Most solar sails use reflection for propulsion, with highly reflective surfaces like mirrors.
- Diffractive Solar Sails: Proposed in 2018, diffractive solar sails offer an alternative propulsion method with claimed advantages.

➢ Advantages of Solar Sail Craft:

- Solar sail craft offer the potential for cost-effective operations, high speeds (in comparison to chemical rockets), and long lifetimes.
- They feature minimal moving parts and require no propellant, allowing for multiple uses in payload delivery.

➢ Astrodynamics of Solar Pressure:

- Solar pressure affects all spacecraft, whether in interplanetary space or orbiting a celestial body.
- Trajectory planning for missions must account for solar pressure effects, as even spacecraft bound for Mars can be displaced thousands of kilometres by it.
- Solar pressure also impacts spacecraft orientation, necessitating consideration in spacecraft design.

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NEWS IN BETWEEN THE LINES

Nilgiri Tahr

Recently, the Tamil Nadu government announced plans to conduct a synchronized survey of the Nilgiri Tahr starting from April 29.

About Nilgiri Tahr:

- The Nilgiri tahr (Nilgiritragus hylocrius) is a **mountain goat native to the Nilgiri Hills** and the southern parts of the Western and Eastern Ghats in **Tamil Nadu** and **Kerala**.
- It is the only species in the **genus Nilgiritragus** and is closely related to sheep.
- **Eravikulam National Park in Kerala** hosts the largest surviving population of this species.
- Nilgiri Tahr is the **state animal of Tamil Nadu**.
- Recognized for its exceptional climbing prowess, Nilgiri Tahr is often dubbed the "**Mountain Monarch**" due to its ability to navigate steep cliffs with ease.
- It is characterized by a **robust physique**, **short coarse fur** and a **distinctive bristly mane.**
- Its coat color typically ranges from **short grey-brown to dark**, aiding in camouflage within their natural habitat.
- It is listed as an **endangered species** by the International Union for Conservation of Nature (IUCN) and protected **under Schedule-I** of the **Wild Life (Protection) Act, 1972**.
- According to a **report released by the World Wildlife Fund** India in **2015**, there are around **3,000 Tahrs in the Western Ghats**.

Atacama Desert

Recently, the researchers have discovered a biosphere of extreme microbes located 13 feet below the Atacama Desert.

About Atacama Desert:

- The Atacama Desert is the **driest non-polar desert in the world,** located on the Pacific coast of South America.
- The desert is bordered on the **west by the Pacific Ocean** and on the east by the **Andean Cordillera.**
- It receives less than 1 mm of precipitation annually and some areas haven't seen rain in more than 500 years.
- The extreme dryness of the Atacama Desert stems from a combination of factors, including the **rain shadow effect of the Andes**, **ocean currents**, **climatic conditions**, **prevailing winds**, high air pressure and the **cold Humboldt Current from the Pacific Ocean**.
- The Atacama Desert is also valuable for its large supply of sodium nitrate.
- Some areas of the **Atacama Desert have been compared to Mars due** to their environmental similarities, making them ideal for Mars mission simulations.

Liquid Nitrogen

Recently, the Food Safety department in Tamil Nadu ordered enforcement actions against Food Business Operators using liquid nitrogen for direct consumption with food items like biscuits, ice creams, and wafer biscuits.

About Liquid Nitrogen:

- Liquid nitrogen (LN_2) is **nitrogen in a liquid state** at a very low temperature, with a boiling point of about -196°C (-321°F).
- It is a colorless, **odorless**, **noncorrosive**, **nonflammable** and **extremely cold liquid.**
- It is **used in a variety of scientific** and **culinary applications** due to its ability to freeze quickly.
- It is **also used as a coolant for various storage purposes**, such as food storage during transportation and cryopreservation of various cells or tissues.
- In **medicine, liquid nitrogen therapy,** also known as **cryotherapy**, is used to freeze and destroy abnormal or unwanted tissue, such as warts, skin tags and some precancerous skin lesions.
- Liquid nitrogen is **produced industrially by fractional distillation of liquid air**.
- It **disappears as soon as it touches the floor** because it rapidly boils and changes back to a gas at room temperature.

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Place in News

Germany

Recently, in a major relaxation, Germany has granted licence to India to purchase small arms from German companies.

Germany (Capital: Berlin)

Location: Germany, situated in the western region of Central Europe, ranks as the second-most populous country in Europe, following Russia.

Political Boundaries: Germany shares its borders with **Poland** and **Czech Republic** (East), **France**, **Luxembourg**, **Belgium** and the **Netherlands** (West), **Denmark** (North), **Austria** and **Switzerland** (South).

Physical Features:

- Major rivers include the **Rhine**, **Elbe**, **Danube** and **Weser**.
- The highest point in Germany is the **Zugspitze**, located in the Bavarian Alps.
- Germany experiences a temperate seasonal climate.
- Germany possesses a variety of mineral resources including **lignite**, **potash**, **salt**, **uranium**, and **natural gas.**

Membership: Germany is a member of various international organizations and alliances, including the **European Union** (EU), **North Atlantic Treaty Organization** (NATO), **United Nations** (UN), **G7**, **G20** and **World Trade Organization** (WTO).

POINTS TO PONDER

- During the Air Force Investiture Ceremony at the National War Memorial complex in New Delhi, which awards were conferred to Indian Air Force warriors? **– Yudh Seva Medal, seven Vayu Sena Medal (Gallantry), 13 Vayu Sena Medal and 28 Vishisht Seva Medal.**
- Which region of India is renowned as the primary habitat for the cultivation of small cardamom, often referred to as the 'Queen of Spices'? **– The Western Ghats (Kerala, Karnataka and Tamil Nadu are major producer)**
- Which organization released the 2024 gender report as part of the Global Education Monitoring Report, titled "Technology on her Terms"? **– UNESCO (United Nations Educational, Scientific and Cultural Organization)**
- Which multinational technology company recently revealed its newest iteration of a 'lightweight' AI model known as the Phi-3-Mini, a Small Language Model? **– Microsoft**
- Which international agreement led to the establishment of the World Trade Organization (WTO) in 1995? **– Marrakesh Agreement (signed in Marrakesh, Morocco, by 123 countries in 1994)**