

31 August, 2023

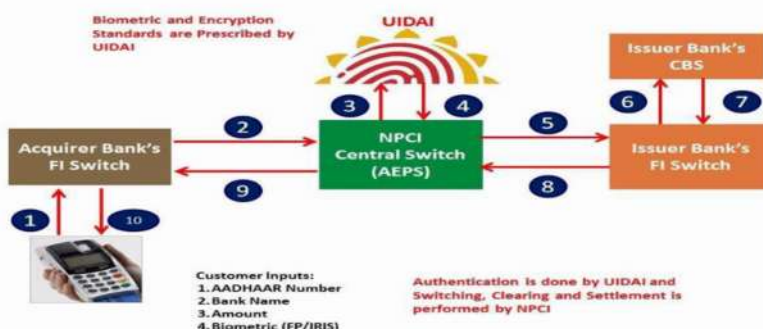
Aadhar based Payment System

Context: The ABPS progress was evaluated, and the mixed wage payment route (NACH and ABPS) extended until December 31, 2023, or further notice.

- The Ministry informs states that beneficiaries must be asked for Aadhaar numbers when they come for work but can't be denied work for lacking it.
- Frequent bank account changes by beneficiaries cause payment rejections due to non-updating of new account numbers by officials.
- The best solution to avoid such issues is the Aadhaar Payments Bridge System (APBS) for timely wage payments.
- APBS links payments to Aadhaar, eliminating the need for account updates after location or bank account changes.
- Success rate for DBT-enabled payments is around 99.55%, while account-based payments have about 98% success.
- APBS helps genuine beneficiaries, curbs corruption, and doesn't affect work demand eligibility.
- APBS has been used under Mahatma Gandhi NREGS since 2017 and is now extended due to widespread Aadhaar availability.
- 81.89% of active workers are now eligible for APBS, with 88.51% of July 2023 wage payments made through it.
- Mahatma Gandhi NREGA benefits from the APBS ecosystem and the well-defined payment process.
- Aadhaar-based payment credits beneficiary accounts using a defined process with clear stakeholder roles.

Aadhar-enabled Payment System

- AePS, created by NPCI, operates under a bank-led model, uniting various banks for seamless transactions.
- Users can utilize any bank's micro-ATM or PoS using AePS to access their accounts, promoting interoperability.
- AePS is used to deliver government benefits and subsidies to Aadhaar-linked bank accounts.
- This secure, user-friendly method is beneficial for those without smartphones or formal banking access.
- AePS eliminates the need for OTPs, bank details, and other financial information.



National Automated Clearing House (NACH)

- NACH serves as a web-based platform that streamlines high-volume electronic transactions for Banks, Corporates, Financial Institutions, and Government.
- This electronic clearing service, established by NPCI, is particularly valuable for banks, handling bulk and recurring transactions.
- NACH aids in distributing subsidies, dividends, salaries, pensions, and collecting payments for utilities, loans, investments, insurance premiums, etc.
- The NACH system comprises ECS Credit and ECS Debit, along with local, regional, and national ECS variants.

Laser-Induced Breakdown Spectroscopy (LIBS) Technique

Context: The Pragyan rover has verified the presence of sulfur at the South Pole of the Moon using the LIBS technique.

- The Chandrayaan-3 rover's LIBS instrument marks the first instance of on-site elemental composition measurements on the lunar surface near the South Pole.
- This LIBS tool, developed by ISRO's Laboratory for Electro-Optics Systems (LEOS), generates plasma from rocks or soil using powerful pulses of energy.
- Alongside the LIBS instrument, the rover is equipped with the Alpha Particle X-Ray Spectrometer, which is designed to further examine the elemental composition of the Moon's surface.
- The Laser-Induced Breakdown Spectroscopy (LIBS) technique involves using laser pulses to create plasma on a sample's surface, which then emits light. This emitted light is analyzed to determine the elemental composition of the sample.

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Laser Pulse Technique (LIBS)

- LIBS is a scientific method that analyzes material composition using intense laser pulses.
- A high-energy laser pulse is focused on a material's surface, generating localized plasma.
- Plasma light is split into spectra and detected using charge coupled devices.
- Elements emit unique wavelengths in plasma, allowing determination of material composition.

Elements on the Moon

- Initial analysis shows Aluminum (Al), Sulphur (S), Calcium (Ca), Iron (Fe), Chromium (Cr), and Titanium (Ti) on the lunar surface.
- Further measurements reveal manganese (Mn), silicon (Si), and oxygen (O) presence.
- Detecting Sulphur is crucial for insights into Moon's history, linked to volcanic activities.
- Sulphur presence can provide valuable information about the Moon's formation and evolution.
- Ongoing investigations focus on understanding the presence of Hydrogen.

Guidelines for Research and Entrepreneurship Across Aspiring Innovators in Technical Textiles (GREAT)

Context: The Ministry of Textiles has granted approval to 26 engineering institutions to introduce Technical Textiles within the framework of the National Technical Textiles Mission.

- Ministry of Textiles approved these guidelines under the National Technical Textiles Mission (NTTM).
- Grant-in-aid of up to INR 50 Lakhs for 18 months is provided.
- Focuses on translating prototypes to technologies, products, and commercialization.
- Emphasizes Technical Textiles' application areas: Agro-textiles, Building-textiles, Geo-textiles, Home-textiles, Medical-textiles, Mobile-textiles, Packaging-textiles, Protective-textiles, Sports-textiles, etc.
- Includes High-performance fibers, Sustainable and Recyclable Textile materials, Smart Textiles (AI, IoT, 3D/4D Printing), indigenous Machinery/Equipment/Instruments.
- Incubators receive an additional 10% of total grant-in-aid.
- Incubatees must invest 10% of funding in two equal installments.
- Aims to boost technical textiles startup ecosystem, especially in Bio-degradable, Sustainable, High-performance & Specialty fibers, and Smart textiles.

Institutes Upgrading and Training

- 26 institutes approved for upgrading laboratory infrastructure and training trainers in technical textiles.
- 15 applications from Public Institutes (INR 105.55 Crores) and 11 from Private Institutes (INR 45.47 Crores).
- Institutes like IIT Delhi, NIT Jalandhar, NIFT Mumbai, Anna University, among others, included.

Enabling Academic Institutes in Technical Textiles' Education (Round II)

- Ministry to re-open guidelines for academic institutes under NTTM with eased parameters.
- Eligibility criteria include NBA score of 750 and above, NAAC rating of A+/3.26 or above, or top 200 NIRF ranked institutes.
- Targeting inclusion of new courses/papers in curriculum by academic year 2025-26.

Quality and Regulation of Technical Textiles

- Ministry notified 02 QCOs for 31 Technical Textiles products, effective from 7th October 2023.
- QCOs for 28 more products (including Agrotexiles, Medical Textiles) likely to be issued in September 2023.
- Multiple stakeholder consultations with industries to assess QCOs' impact on the economy and society.

National Technical Textiles Mission

- The Ministry of Textiles initiated this mission, spanning 4 years from 2020-21 to 2023-24, with a budget of Rs. 1480 crores.
- The primary objective is to establish India as a global leader in Technical Textiles. The mission sets a target of achieving a domestic market size of \$40-50 billion by 2024, with an average annual growth rate of 15-20%.
- Aligned with the 'Make in India' initiative, the mission encourages the domestic production of machinery and equipment related to Technical Textiles.
- The mission is structured around four main components:
 - Research, Innovation, and Development.
 - Promotion and Market Development.
 - Export Promotion.
 - Education, Training, and Skill Development.
- The focus is on integrating technical textiles into flagship national programs, reducing import dependence, and fostering domestic manufacturing of capital goods in the sector.

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NEWS IN BETWEEN THE LINES

Liquid Apogee Motor



What is Liquid Apogee Motor?

- The Liquid Apogee Motor (LAM) is a small but powerful engine used for orbital adjustments of satellites and spacecraft.
- Its main function is to fine-tune the trajectory of the spacecraft during its journey in space.

Developed by LPSC:

- LAM is developed by the Liquid Propulsion Systems Centre (LPSC), an ISRO center based in Thiruvananthapuram.
- LPSC is responsible for liquid and cryogenic propulsion systems used in various space missions.

Role in Space Missions:

- LAM has played a crucial role in multiple space missions, including the Mars Orbiter Mission (Mangalyaan), Chandrayaan-3, and more.

Components and Propellant:

- LAM uses a combination of propellants, typically mono-methyl hydrazine (MMH) and mixed oxides of nitrogen (MON3).

Orbital Adjustment:

- LAM engines are used primarily for adjusting the orbit of a spacecraft.
- They are activated to alter the spacecraft's velocity, trajectory, or position as needed for the mission's objectives.

LAM in Aditya-L1 Mission:

- LAM plays a critical role in ISRO's Aditya-L1 mission, which aims to study the sun.
- In this mission, LAM will be used to position the Aditya spacecraft in a halo orbit at Lagrangian Point L1, 1.5 million km away from Earth.

Walking Leaves



About:

- Walking Leaves, also known as leaf insects, are a group of insects that closely resemble leaves in appearance.
- Walking Leaves are insects that imitate the appearance of leaves, belonging to the order Phasmida or Phasmatodea.
- More than 50 species of these flat, usually green insects are known for their striking leaf-like appearance.
- They primarily feed on plants and are commonly found in densely vegetated areas.
- Their natural habitat extends from Indian Ocean islands to parts of South Asia, Southeast Asia, Papua New Guinea and Australia.
- Females walking leaves are generally larger than males.
- These insects are often brown or green in colour, some with speckled patterns or serrated edges resembling nibbled leaves.
- Walking leaves reproduce sexually, with females laying eggs.

Blue Supermoon



On August 30, a rare event took place in the sky with the rise of a "Super Blue Moon," which is the result of the combination of a supermoon and a Blue Moon.

What is Blue Supermoon?

- Blue Supermoon, a rare celestial event, is captivating sky gazers worldwide for the first time since 2009.

What is a Blue Moon?

- A Blue Moon takes place when there are 13 full Moons in a year, rather than the usual 12.
- The occurrence is due to the specific arrangement of days in a year.

Blue Moon and Supermoon Combination:

- This blue Moon is also a supermoon, signifying the Moon's closest proximity to Earth in its orbit.
- The Moon appears unusually bright during a supermoon due to its close approach to Earth.

Naming and Coloration

- The term "blue Moon" does not refer to the color of the Moon; it is named for its deviation from the typical naming scheme of Moons.

The phenomenon's name is a historical quirk and has no relation to the Moon's color.

Funga



Recently, the United Nations Biodiversity initiative aims to give equal recognition and protection to fungi by encouraging the use of the term "funga" in conjunction with "flora and fauna."

The Importance of Fungi:

- Fungi, Animalia, Plantae, Protista, Archaea/Archaeobacteria and Bacteria form the six "kingdoms" of biology.
- Fungi are crucial for decomposition, forest regeneration, digestion in mammals, carbon sequestration, nutrient cycles, antibiotics, and various human consumables (bread, beer, chocolate).

Incorporating "Funga" in Language:

- Language shapes reality, and using "funga" is essential to highlight fungi's importance.
- The UN suggests integrating "funga" in everyday conversations, educational materials, media, and social media vocabulary to underscore fungi's role.

Inclusive Conservation Efforts

- The Species Survival Commission (SSC) of IUCN adopted "mycologically inclusive" language to acknowledge fungi's role.

Recognizing Fungi's Role:

- Fungi play a vital role in maintaining Earth's ecosystems, ranging from forest health to nutrient cycles.
- Integrating "funga" in communication helps promote understanding of fungi's essential role in the web of life.

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Red Sand Boa 	Name and Classification: The Red Sand Boa (<i>Eryx johnii</i>) falls under the reptile category and is classified as 'Near Threatened' by the IUCN. Illegal Trade: ➤ 172 incidents of red sand boa seizures documented from 2016 to 2021 ➤ Compiled by the Counter Wildlife Trafficking unit of WCS-India High-Incidence Regions: ➤ Maharashtra recorded the highest number of incidents (59) ➤ Urban areas like Pune, Thane, Raigad, and Mumbai Suburban most affected ➤ Uttar Pradesh had the second highest number (33), particularly near the Nepal border Reasons for Trade: ➤ High demand for the pet trade ➤ Use in black magic practices Conservation Concerns: ➤ Red Sand Boa's 'Near Threatened' status reflects decreasing population trends ➤ Importance of addressing illegal trade to conserve the species
Place in News Gabon	In a recent development, mutinous soldiers in Gabon seized power after the president's election victory extended his family's 55-year rule. Gabon: (Capital: Libreville) Political Boundaries: ➤ Gabon is a country located on the west coast of Central Africa. ➤ It shares its political boundaries with the following countries: Gabon's northern border is shared with Equatorial Guinea, to the north and northeast, its eastern border is with the Republic of the Congo, western coastline along the Atlantic Ocean.  Physical Features of Gabon: Rivers: The Ogooué River is the most significant river in Gabon, flowing through the country and playing a vital role in transportation and commerce. Monts de Cristal: This mountain range is located in the northeastern part of Gabon and includes the highest point in the country, Mount Iboundji. Recent Coups in Africa: Niger (July 2023): Presidential guard detained Mohamed Bazoum and announced power seizure. Burkina Faso (Jan 2022): Army ousted President Roch Kabore, citing failure to contain militant violence. Chad (April 2021): Army took over after President Idriss Deby's death during rebel clashes. Guinea (Sept 2021): President Alpha Conde ousted by a commander. Mali (Aug 2020): Army ousted President Ibrahim Keita following anti-government protests.
Place in News Alladi Ramakrishnan	Alladi Ramakrishnan: (August 9, 1923-June 7, 2008) He was an eminent Indian physicist known for his significant contributions to theoretical physics and his instrumental role in establishing the Institute of Mathematical Sciences (IMSc) in Chennai, India. Influence of Niels Bohr: ➤ Physics Nobel Laureate Niels Bohr's visit to India in 1960 highlighted the impact of Ramakrishnan's teaching on his students. ➤ Bohr's praise for Ramakrishnan's work garnered attention. Foundation of IMSc: ➤ With support from Prime Minister Jawaharlal Nehru, Ramakrishnan established the Institute of Mathematical Sciences (IMSc) in 1962. ➤ He served as its founding director and played a crucial role in shaping its academic direction. Leadership and Legacy: ➤ Ramakrishnan's leadership and dedication helped IMSc grow into a prominent research institution. ➤ He fostered an environment conducive to theoretical physics research and nurtured young talents. 
POINTS TO PONDER	
❖ Recently who is appointed by the National Institute of Disaster Management (NIDM) for the climate change awareness campaign? - Maithili Thakur ❖ Which flagship scheme has recently launched by the Karnataka government? - Gruha Lakshmi ❖ What is the primary payload on India's Aditya-L1 mission? - VELC (Visible Emission Line Coronagraph) ❖ What is the name of the repository set to open in Finland for deep geological disposal? - Onkalo ❖ According to the report for 2023 by the University of Chicago, which country is the second most polluted country in the world? - India	

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