8. Short News

1. India Develops Flexible and Eco-Friendly Aluminium Battery

Indian scientists have announced the development of a flexible, safe, and eco-friendly aluminum-based battery, positioning it as a viable alternative to the commonly used lithium-ion batteries, which are often prone to overheating and explosions.

About the Flexible Aluminium Battery -

Core Technology - It uses aluminum and a water-based solution, replacing the lithium-ion chemistry.

Components -

1. **Cathode -** Copper hexacyanoferrate (CuHCFe), pre-filled with aluminum ions.
2. **Anode -** Molybdenum trioxide (MoO_3).

Developers - The battery was developed by the Centre for Nano and Soft Matter Sciences (CeNS), Bengaluru, in collaboration with the Centre for Nano Science and Engineering (CeNSE) at the Indian Institute of Science (IISc).

Key Features and Performance -

Flexibility - The battery is designed to be flexible and can be bent or folded without any loss of function.

Enhanced Safety - It is inherently safer as it prevents overheating and the risk of explosions.

Eco-Friendly and Cost-Effective - It is environmentally friendly and cheaper to produce, leveraging aluminum, which is an abundant resource on Earth.

Durability - The battery has shown excellent durability, maintaining 96.77% of its capacity even after 150 charging and discharging cycles.

Applications and Significance -

Demonstrated Use - It has successfully powered an LCD display, even while being bent at extreme angles.

Potential Uses - Its properties make it ideal for flexible smartphones, safer Electric Vehicles (EVs), and wearable electronics that can be integrated into clothing.

Significance - This development represents a major advance in multivalent ion battery technology, aligning with global sustainability goals and positioning India at the forefront of next-generation energy storage.

2. "Involution" - China's Economic Challenge of Self-Defeating Competition

The Chinese economy is currently grappling with a phenomenon that has been locally termed nêijuân, or an involution.

"Involution"

Definition - It refers to a vicious cycle of self-defeating, zero-sum competition. The term is derived from a Latin phrase meaning 'to turn inwards'.

Core Concept - It is essentially a state of hyper-competition where firms exhaust themselves in a frantic race to outdo each other, but these efforts do not lead to any real growth or innovation, ultimately damaging the entire industry.

Causes and Effects -

Cause - The cycle is driven by companies aggressively slashing prices and massively scaling up production to capture market share from rivals.

Effect - These moves undermine profitability, create unsustainable cost structures, and lead to massive overcapacity, often resulting in goods being sold below their actual production cost.

Real-World Example - The Chinese government in Beijing has initiated an anti-price-war campaign to counter "involution" in its crowded Electric Vehicle (EV) sector, where executives have warned of a severe consolidation among the 120–130 competing EV makers.

3. India, Iran, and Uzbekistan Hold First Trilateral Meeting

The first-ever foreign ministers' level trilateral meeting between India, Iran, and Uzbekistan was recently hosted in Tehran, Iran, to strengthen cooperation on security, connectivity, and trade.

Key Objectives -

1. To establish a formal mechanism for combating extremism and terrorism in the region.
2. To expand trilateral cooperation in connectivity, trade, and regional security.

Key Areas of Discussion -

Chabahar Port - There was a strong emphasis on encouraging greater use of the Chabahar Port by Uzbekistan for its trade with India. The interest of Kazakhstan and Tajikistan in using the port was also acknowledged.

International North-South Transit Corridor (INSTC) - The meeting focused on leveraging the INSTC, a multi-modal transport network designed to enhance connectivity between India, Iran, Russia, and the wider Eurasian region.

Eurasian Economic Union (EAEU) - India highlighted its push for an early harvest Free Trade Agreement (FTA) with the EAEU to gain better access to Eurasian markets and to source critical rare earth minerals.

4. Supreme Court Affirms Use of Aadhaar for Voter Verification

The Supreme Court has affirmed that Aadhaar is a legally valid tool for voter verification under the Representation of the People Act and can be used as identity proof in the ongoing Special Intensive Revision (SIR) of Bihar's electoral rolls.

About the Special Intensive Revision (SIR) -

Purpose - The Election Commission (EC) has initiated the SIR to tackle the issue of duplicate entries in electoral rolls, often caused by urbanization and migration, and to ensure that only eligible citizens are listed as voters.

Current Focus - The nationwide revision is beginning with Bihar, where the last comprehensive revision of this nature was conducted in 2003.

Legal Basis - The EC's authority is derived from Article 324 of the Constitution and the Representation of the People Act, 1950.

Supreme Court's Recent Observation - The Court pointed to Section 23(4) of the Representation of the People Act, 1950, which explicitly permits Election Commission officials to use Aadhaar for authenticating entries in the electoral rolls. It directed the EC to include Aadhaar as the 12th "indicative" document for identity verification, cementing its place within the statutory framework for voter verification.

5. National Makhana Board Launched in Bihar

Prime Minister Modi launched the National Makhana Board in Purnea, Bihar, and approved a development package of approximately ₹475 crore for the makhana sector.

Makhana

Scientific Name & Common Names - Euryale ferox, also known as fox nut.

Nature - It is an aquatic crop cultivated in stagnant freshwater ponds and wetlands.

Edible Part - The edible part is a small, round seed with a black to brown outer layer, which has earned it the nickname 'Black Diamond.'

Cultivation and Production -

Climatic Conditions - It requires a temperature of 20-35°C, high humidity (50-90%), and significant rainfall.

Dominance of Bihar - The state of Bihar produces about 90% of India's total makhana output, particularly from the Mithilanchal and Seemanchal regions.

Geographical Indication (GI) Tag - In 2022, 'Mithila Makhana' was awarded a GI tag, recognizing its unique origin, quality, and traditional production methods.