



29 December, 2023

Commutation of Death Sentence

Context: On December 28, the Qatar Court of Appeal reduced the death sentence for eight former Indian Navy personnel accused of espionage.

➤ Pardoning Powers of the President:

- **Granting Pardons:**
 - In cases where punishment or sentence is for an offense against Union Law or under Concurrent Lists.
 - When the punishment or sentence is by a court martial.
 - Specifically, when the sentence is a death penalty.
- **Reasons for Conferment:**
 - To correct judicial errors.
 - To provide relief from a sentence considered unduly harsh.
- **Conditions for Exercising Pardoning Power:**
 - Exercise under Article 72 requires advice from the Council of Ministers.

➤ Process of Granting Pardon:

- **Initiation:** Starts with filing a mercy petition under Article 72.
- **Review and Consideration:**
 - Petition sent to the Ministry of Home Affairs for consideration.
 - Home Ministry, in consultation with the concerned State Government, discusses the petition.
- **Recommendation and Approval:**
 - Home Minister makes recommendations.
 - Petition is sent back to the President for approval.

➤ Key Terms:

- **Pardon:** Absolves the convict from the sentence and conviction, eliminating all associated sentences, punishments, and disqualifications.
- **Commutation:** The substitution of a more severe form of punishment with a lighter one. For instance, changing a death sentence to rigorous imprisonment, which can further be commuted to simple imprisonment.
- **Remission:** Reducing the duration of the sentence without altering its nature. For example, shortening a 1-year imprisonment sentence to 6 months.
- **Respite:** Granting a milder sentence than originally imposed due to specific circumstances, such as the physical disability of a convict or the pregnancy of a woman offender.
- **Reprieve:** Temporarily delaying the execution of a sentence, particularly a death sentence, to provide the convict time to pursue pardon or commutation from the President.
- **Difference Between President and Governor's Pardoning Power:**
- **Military Court Sentences:**
 - President can pardon court-martial sentences.
 - Governor lacks such power.
- **Death Sentence:**
 - President can pardon the death sentence.
 - Governor can suspend, remit, or commute but cannot pardon.

➤ Supreme Court's Principles on Pardoning Powers:

- **Oral Hearing:** Convict seeking relief has no right to insist on an oral hearing.
- **Guidelines:** No need for Supreme Court guidelines in exercising the power.

- **Central Government's Role:** Power exercised by the President on the advice of the Central Government.
- **Judicial Review:** Limited scope for judicial review, as indicated in Maru Ram's case.
- **Reasons for Order:** President is not obligated to provide reasons for the order.
- **Relief Scope:** Relief can be granted not only from a harsh sentence but also from an evident mistake.
- **Rejection of Mercy Petition:** No stay can be obtained by filing another petition after rejection by the President.

Non-Performing Assets Ratio of Banks

Context: The Reserve Bank reported that as of September 2023, banks' net non-performing assets ratio reached a multi-year low of 0.8 percent, indicating the continued resilience of the country's domestic financial system.

- The RBI's Financial Stability Report (FSR) highlighted the improved resilience of Non-Banking Financial Companies (NBFCs) sector.
- CRAR (Capital to Risk-weighted Assets Ratio) stood at 27.6%, GNPA ratio at 4.6%, and Return on Assets (RoA) at 2.9% by September 2023.
- Banks' Gross Non-Performing Assets (GNPA) ratio also decreased to 3.2%, hitting a multi-year low.
- The report represents the joint evaluation of risks to financial stability and the strength of the Indian financial system by the Sub-Committee of the Financial Stability and Development Council (FSDC).
- Scheduled Commercial Banks (SCBs) recorded a CRAR of 16.8% and a CET1 (Common Equity Tier 1) ratio of 13.7% by September 2023.
- Macro stress tests for credit risk indicate SCBs' ability to meet minimum capital requirements, with projected system-level CRAR at 14.8%, 13.5%, and 12.2% by September 2024 under baseline, medium, and severe stress scenarios, respectively.
- **Definition of NPAs by Reserve Bank of India (RBI):**
 - An asset, including a leased asset, is classified as non-performing when it stops generating income for the bank.
- **Technical Definitions by RBI on NPAs in Different Cases:**
 - Interest and/or installment of principal overdue for more than 90 days in the case of a term loan.
 - Overdraft/Cash Credit (OD/CC) account remains 'out of order.'
 - Bills purchased and discounted remain overdue for over 90 days.
 - Installment of principal or interest overdue for two crop seasons for short-duration crops.
 - Installment of principal or interest overdue for one crop season for long-duration crops.
 - Liquidity facility amount outstanding for over 90 days in a securitization transaction.
 - Overdue receivables from derivative transactions unpaid for 90 days from the specified due date.
- **Categories of Non-Performing Assets (NPAs):**
 - **Substandard Assets:** NPAs for less than or equal to 12 months.
 - **Doubtful Assets:** Assets that remained as NPAs for 12 months.
 - **Loss Assets:** Assets where loss is identified, but some residual value remains. The loan is not completely written off.

Face to Face Centres





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Electronic Soil

Context: In a recent study, barley seedlings demonstrated a 50% increase in growth on average when exposed to a newly developed eSoil that stimulated root systems.

➤ Bioelectronic Soil Development:

- Researchers at Linköping University in Sweden created a 'bioelectronic soil' named eSoil.
- It is designed to accelerate plant growth in hydroponic spaces, where plants grow without soil in water-based environments.

➤ Composition of eSoil:

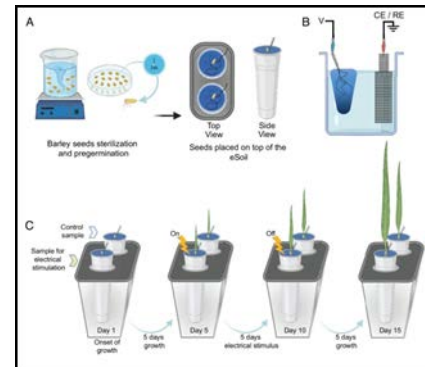
- eSoil consists of organic substances combined with a conductive polymer called PEDOT, commonly found in sensors and OLED displays.
- The soil's conductivity is crucial for stimulating plant roots.

➤ Effect on Plant Growth:

- When eSoil was integrated into the growth framework for barley seedlings, electrical signals promoted a 50% increase in average plant growth.
- The stimulation involved applying a small voltage of 0.5V to electrically stimulate the roots.

➤ Study Findings:

- The study spanned 15 days, focusing on the impact of electrical signals on barley seedlings.
- The stimulated plants exhibited a noticeable increase in biomass compared to non-stimulated seedlings.
- The effect of stimulation on barley seedlings was described as both "steady" and "transient."
- **Efficient Nutrient Processing:** The study observed that the stimulated plants processed nutrients more efficiently, particularly nitrogen, a key nutrient for plant growth.



➤ Potential Applications and Benefits:

- eSoil offers potential solutions to increase crop yields in hydroponic farms, especially in areas with challenging environmental conditions.
- The technology could reduce reliance on fertilizers in farming.

➤ Energy Conservation in Hydroponic Farms:

- Implementation of eSoil in hydroponic farms has the potential to make them more energy-conscious.
- Traditional hydroponic farms use less water but require more energy, while eSoil consumes very little power in the microwatt range.

➤ Challenges and Future Studies:

- Before widespread application, further studies are needed to assess the long-term impact of electrical stimulation on the entire plant growth cycle.
- Future research will explore how the technique affects the growth of various plant species beyond barley.

NEWS IN BETWEEN THE LINES

Valkyrie



Valkyrie, named after a Norse mythology figure, is being tested at NASA's Johnson Space Center in Houston, Texas, designed to operate in degraded or damaged human-engineered environments, like those impacted by natural disasters.

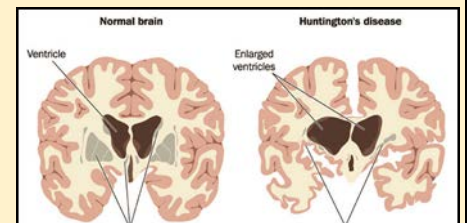
- Valkyrie is a 6-foot-2-inch humanoid space robot developed by NASA's Johnson Space Center, costing \$2 million.
- It will undergo Martian-specific tests in NASA's Space Robotics Challenge, with a \$1 million prize for the winning team.
- Resembling Iron Man, Valkyrie features a LIDAR sensor, cameras, and sensors for environmental awareness.
- Equipped with three-fingered hands with 38 sensors, it has 44 degrees of freedom, controlled by small motors.
- Valkyrie's intelligence relies on two Intel Core i7 computers, and it has a one-hour battery life.
- Originally designed for disaster relief, Valkyrie was reconfigured for potential use as a "caretaker" robot on Mars.

Huntington's disease



Huntington's disease, an inherited condition, gradually leads to brain cell loss, impacting movement and memory.

- It manifests in two forms: adult onset (after 30) and juvenile onset (rare, affecting children/teens).
- Prevalence is estimated at 3 to 7 per 100,000, primarily among those of European ancestry.
- Symptoms encompass uncontrolled movements, coordination loss, swallowing difficulties, slurred speech, mood swings, and cognitive challenges.
- Chorea, marked by unintended jerks or twitches, is an early physical sign.
- The condition results from a genetic mutation in the HTT gene, disrupting huntingtin protein production.
- Nerve cell destruction occurs in the basal ganglia and brain cortex, impacting both movement and cognition.



Face to Face Centres





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Solicitor General 	The Delhi High Court has overturned a 2011 order from the Central Information Commission (CIC) that mandated the release of an opinion provided in 2007 by the then Solicitor General of India to the Centre. - The Solicitor General holds the position of the second-highest law officer in the country. - Subordinate to the Attorney General of India, the Solicitor General operates under the guidance of the Attorney General. - The primary responsibility involves providing legal advice to the government on various matters. - Appointment to the role is for a three-year term, determined by the Appointment Committee of the Cabinet chaired by the Prime Minister. Duties of the Solicitor General: - Provide legal advice to the Government of India on various legal matters. - Undertake any legal duties assigned or referred to by the Government of India. - Appear in the Supreme Court or any High Court when required, representing the Government of India in cases where it is a party or has an interest. - Represent the Government of India in references made by the President to the Supreme Court under Article 143 of the Constitution.
Pegasus 	Amnesty International's investigation discloses the Indian government's use of Pegasus spyware to target high-profile journalists. - Pegasus is a type of spyware, categorized as malicious software or malware. - Its primary purpose is unauthorized access to devices, surreptitiously collecting personal information, and transmitting it to the entity employing the spyware. - NSO Group, an Israeli firm established in 2010, developed Pegasus. - The initial version, identified in 2016, infected phones through spear-phishing, using deceptive text messages or emails to lure targets into clicking on malicious links. - Over time, NSO's capabilities evolved, enabling Pegasus to execute "zero-click" attacks, requiring no interaction from the phone's owner. "Zero-click" attacks often exploit "zero-day" vulnerabilities, which are undiscovered flaws or bugs in an operating system unknown to the device's manufacturer, preventing timely fixes.
Place in News Poland	- Poland is the ninth-largest country in Europe, covering an area of around 312,696 square kilometers. - Poland is located in Central Europe, sharing borders with Germany, the Czech Republic, Slovakia, Ukraine, Belarus, and Lithuania. - The capital and largest city of Poland is Warsaw. - The official language is Polish, and the currency is the Polish zloty (PLN). - Poland joined the European Union in 2004, marking a crucial step in its post-Soviet era development. - The Solidarity movement, led by Lech Wałęsa, played a pivotal role in challenging communist rule, ultimately leading to the end of communism in Poland in 1989. - Poland is a member of NATO and the European Union, contributing to regional and international cooperation. - The country boasts natural beauty, including the Tatra Mountains and the Masurian Lake District. 

POINTS TO PONDER

- Which ministry in India is responsible for overseeing the FAME India Scheme? - **Ministry of Heavy Industries**
- The Union government plans to revive tax remission benefits on the export of which item, previously categorized as 'restricted' in mid-2022? - **Sugar**
- Who recently secured the title at the Chennai Grand Masters 2023 tournament? - **Dommaraju Gukesh**
- In Uttar Pradesh, which two districts have inaugurated the state's inaugural intra-district helicopter service? - **Prayagraj and Varanasi**
- From which Indian state was the inaugural Himalayan Air Safari recently launched? - **Uttarakhand**

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