IMPORTANT NEWS

Luna 25: Russia's Lunar Mission

Inside Story of the News:

On August 11, Russia is prepared to initiate the maiden voyage of its lunar landing vehicle, Luna-25. This event signifies a noteworthy advancement in Russia's revitalized pursuit of lunar exploration. This endeavor comes in the wake of India's recent launch of the Chandrayaan-3 lunar lander, highlighting the worldwide curiosity in investigating the moon's southern pole. This region is believed to hold valuable resources like ice, which could be pivotal for sustaining human settlements in the future.

- In August 2023, Roscosmos, the Russian space agency, executed the Luna 25 lunar lander mission, targeting a landing site near the lunar South Pole at the Boguslawsky crater.
- The Luna-25 spacecraft was launched aboard a Soyuz 2.1v rocket from the Vostochny cosmodrome, located 5,550 kilometers east of Moscow, on August 11.
- Russia's Space chief stated that the anticipated landing date for the lander on the lunar surface was August 21.
- Upon reaching the moon's South Pole, the Luna-25 vehicle, approximately the size of a small car, is designed to operate continuously for a year.
- Unfortunately, the much-awaited Luna-25 lunar mission encountered a major setback when the spacecraft lost control and crashed onto the Moon's surface.
- The previous successful Russian lunar landing occurred in 1976, resulting in a considerable gap in the nation's lunar exploration endeavors.
- The primary objective of Luna-25 is to collect rock samples from depths of up to 15 cm and subject them to analysis to identify the presence of frozen water, a crucial resource for future lunar settlements.

Distinguishing Luna 25 from Chandrayaan 3:

- **Introduction:**
  - Luna 25 signifies Russia's return into lunar exploration after a 47-year break, aiming to restore its standing in the realm of space exploration.
  - Chandrayaan-3 represents India's third lunar mission and second endeavour to softly land on the lunar surface.
- **Payload Distinctions:**
  - Luna 25 has a lighter profile and lacks a rover, centring its efforts on the study of soil composition, dust particles, and the identification of surface water.
  - Chandrayaan-3 carries a mobile rover with a range of 500 meters, with its focus set on the analysis of lunar soil and equipped with instruments to spot water-ice within shaded craters near the moon's South Pole.

- **Operational Duration:**
  - Luna 25 is engineered for a year-long mission, complete with heating mechanisms and a power source not reliant on solar energy.
  - Chandrayaan-3's design allows for operation during a single lunar day, as it lacks heating capabilities during the moon's nights.
- **Objective:**
  - **Russian Lander Payloads:**
    - The Russian lander features eight payloads with distinct objectives.
    - These payloads are primarily focused on the identification of surface water.
    - Additionally, they play a crucial role in analyzing soil composition and studying dust particles within the polar exosphere.
  - **Indian Mission Instruments:**
    - The Indian mission is equipped with specialized instruments for analyzing lunar soil.
    - It also targets the study of water ice.
    - The mission strategically focuses on regions that remain in continuous darkness, particularly craters near the moon's southern pole, to increase the chances of identifying water ice.

The Cauvery River Water Sharing Dispute

Inside Story of the News:

The Cauvery water dispute has once again come to the forefront as Tamil Nadu appeals to the Supreme Court of India for its intervention in ensuring that Karnataka releases 24,000 cubic feet per second (cusecs) of water from its reservoir. Additionally, Tamil Nadu is urging the court to instruct Karnataka to guarantee the release of the stipulated 36.76 TMC (thousand million cubic feet) of water for September 2023, as outlined in the Cauvery Water Disputes Tribunal (CWDT)'s final award from February 2007, which was subsequently modified by the Supreme Court in 2018.

- The Cauvery River, also known as Kaveri, holds the distinction of being the largest river in the state. It originates from Talakaveri in the Brahmagiri hills of Karnataka's Western Ghats.
- Among the tributaries contributing to the Kaveri's flow are:
  Harangi, Hemavathi (which joins the river near Krishnarajasagar after originating in the Western Ghats), Lakshmanatirtha, Kabini (originating in Kerala and merging with the Kaveri at Tirumakudal, Narasipur), Shimsha, Arkavati, Suvarnavathi or Honnuholé, Bhavani, Lokapavani, Noyyal, and Amaravati.
- The dispute revolves around a longstanding conflict concerning the distribution of water from the Cauvery River.
- The conflict involves four entities: Tamil Nadu, Kerala, Karnataka, and Puducherry, a Union Territory.
- The origins of this dispute trace back to 1892 during British colonial rule, involving the Presidency of Madras and the Princely state of Mysore.
- In 1924, Mysore and Madras reached an agreement that was valid for 50 years, expiring in 1974.

- Post-1974, Karnataka began diverting water into new reservoirs it had constructed, without Tamil Nadu's consent, resulting in a dispute in the post-independence period.
- In 1990, the Cauvery Water Disputes Tribunal (CWDT) was established to address the issue.
- The CWDT took 17 years to issue its final order in 2007, delineating the allocation of Cauvery water among the four states.
- During distress years, water sharing would occur proportionally.
- The CWDT's February 2007 award specified water allocations based on a normal availability of 740 TMC.
- The allocation breakdown is as follows: **Tamil Nadu - 404.25 TMC, Karnataka - 284.75 TMC, Kerala - 30 TMC, and Puducherry - 7 TMC.**
- In 2018, the Supreme Court designated the Cauvery as a national asset and largely upheld the water-sharing arrangements determined by the CWDT.
- The Court also mandated the establishment of **the Cauvery Management Scheme**.
- In June 2018, the government implemented the 'Cauvery Water Management Scheme,' forming the Cauvery Water Management Authority (CWMA) and the Cauvery Water Regulation Committee (CWRC) to enforce the decision.

Mizoram 1966: The Role of Air Force Operations in Suppressing "Operation Jericho"

Inside Story of the News:

The mention of the employment of aerial capabilities in Mizoram during 1966 has ignited substantial discourse following its reference by the Prime Minister of India during his response to the no confidence motion in the Lok Sabha.

Events in Mizoram during 1966:

- During the initial two months of 1966, a secessionist movement led by the Mizo National Front (MNF) was gaining momentum in the region now **recognized as Mizoram, previously referred to as the Mizo Hills.**
- Responding to this, the central administration opted **to station an additional Assam Rifles battalion in the Hills**, supplementing the existing presence of **one Assam Rifles battalion and a few Borders Security Force (BSF) companies.**
- This move infuriated the MNF leadership, prompting them to initiate **'Operation Jericho'** with the objective of seizing control over Aizawl, the largest town in the vicinity, and subsequently extending their influence throughout the Mizo hills.
- Their efforts resulted in the capture of Aizawl within a matter of days in late February.

Government's Reaction and Response:

- Spearheading the ground operations to reclaim positions held by the rebels was Brigadier (subsequently Major General) Rustom Zal Kabraji, who commanded the 61 Mountain Brigade situated in Agartala.

- Maj Gen Kabraji, a member of the Corps of Signals, marked a significant milestone as the first Signals officer entrusted with the command of a mountain brigade.
- His brigade was deployed to the Mizo Hills during a period when the insurgents had entered Aizawl.
- In the midst of the turmoil, the Mizo rebels had besieged the headquarters of 1 Assam Rifles, where the Deputy Commissioner had sought refuge, and orchestrated the release of all inmates from the local prison.
- A pervasive wave of looting targeted arms and cash stored in the government treasury.
- Declarations of "independence" echoed, coupled with a demand for the surrender of the Assam Rifles.
- Efforts to replenish the Assam Rifles battalion via helicopters were met with gunfire from the Mizo rebels in response.
- Undeterred by the tenacious resistance mounted by the rebels, Brig Kabraji led the ground operations, requiring several days to reach Aizawl.
- Simultaneously, other battalions advanced on different operational fronts.

Involvement of the Indian Air Force (IAF):

- While the Army grappled with efforts to dislodge the insurgents, the Indian Air Force (IAF) was enlisted for support.
- The initial focus of the **IAF was to replenish the army installations**, leading to the deployment of Dakotas and Caribou transport aircraft from Guwahati and Jorhat.
- During one such mission, a Dakota aircraft exhibited 21 bullet holes upon landing at Kumbhigram air base near Silchar.
- This incident marked the turning point that mandated the initiation of offensive air operations.
- The key contributors to the aerial operations were the 29 Squadron and the 14 Squadron of the IAF.
- The 29 Squadron operated the Toofani (French Dassault Ouragan) from Bagdogra, while the 14 Squadron operated Hunters from Jorhat.
- The actual air missions commenced on March 5.
- The aerial assaults played a pivotal role in assisting the Army to reclaim extensive regions that had declared independence.
- By the close of the month, Brigadier Kabraji's Brigade had successfully restored control over Mizoram.

INS Vindhyagiri: Advancements in Stealth Frigate Technology

Inside Story of the News:

President Droupadi Murmu inaugurated the **INS Vindhyagiri, the final addition in the trilogy of Project 17A (Alpha) frigates**. Constructed by the Indian Navy at the facilities of Garden Reach Shipbuilders and Engineers (GRSE) located in **Kolkata.**

- Bearing the name of the **mountain range in Karnataka, Vindhyagiri assumes the role of the sixth vessel within the Project 17A initiative.**
- As a frigate of advanced technological prowess, Vindhyagiri not only commemorates its predecessor, the former INS Vindhyagiri, but also serves as a testament to India's resolve in upholding its illustrious naval legacy. This sentiment is harmonized with the nation's commitment to advancing its self-reliance in defense capabilities, firmly embracing a future rooted in indigenous innovation.

Indian Navy's Project 17A: Enhancing Naval Capabilities:

- In 2019, the Indian Navy initiated **the Project 17 Alpha frigates (P-17A) program.**
- These frigates represent the successive iteration of the Project 17 (Shivalik Class) Frigates, boasting enhanced stealth characteristics, advanced weaponry and sensors, and cutting-edge platform management systems.
- Distinguished by a purposeful stealth configuration, these guided-missile frigates feature radar-absorbent coatings and low-observable design, rendering their approach inconspicuous to potential adversaries.
- This innovative technology also diminishes the ship's infrared emissions.
- Under the P17A initiative, seven vessels are concurrently under construction, with **four at MDL (Mazagon Dock Shipbuilders Limited) and three at GRSE (Garden Reach Shipbuilders and Engineers).**
- The ships bear names such as INS Nilgiri, INS Himgiri, INS Udaygiri, INS Dunagiri, INS Taragiri, INS Vindhyagiri, and INS Mahendragiri, each denoting prominent hill ranges in India.
- From 2019 to 2022, five Project 17A ships have been launched: 'Nilgiri,' 'Himgiri,' 'Udaygiri,' 'Dunagiri,' and 'Taragiri,' with the sixth being 'Vindhyagiri.'
- The Project 17A vessels have been conceived and designed internally by the Indian Navy's Warship Design Bureau (WDB).
- Echoing the nation's unwavering commitment to self-reliance (Aatma Nirbharta), a substantial 75% of the equipment and systems for Project 17A ships have been sourced from domestic enterprises, including Micro, Small, and Medium Enterprises (MSMEs).

Understanding the Concept of a Stealth Frigate:

- A stealth frigate is a specialized class of naval vessel engineered with advanced stealth technology and attributes, intended to significantly diminish its radar cross-section and overall perceptibility to enemy surveillance systems.
- This technological prowess empowers the frigate to operate with heightened discretion, considerably reducing the likelihood of radar detection.
- This strategic advantage makes it notably challenging for opponents to monitor, designate, and engage the vessel effectively.
- As a result, these vessels are **optimally employed for safeguarding patrol missions and providing escort duties for larger naval units.**
- Frigates find application in diverse maritime security operations, including tasks such as anti-piracy patrols and counter-narcotics endeavors.

- Their nimbleness and swiftness render them particularly well-suited for pursuing smaller, more agile vessels, while their array of weapon systems and sophisticated sensors equip them to identify and trace illicit activities across the sea.

G20 Health Ministers' Meeting: Key Highlights and Outcomes

Inside Story of the News:

The conclusion of the G20 health ministers' meeting in Gandhinagar saw the endorsement of the outcome document, spearheaded by the Indian Health Ministry. The document garnered **unanimous agreement from all G20 delegates, save for a debated paragraph related to the ongoing conflict in Ukraine, contained within the 25-point document.**

- In the context of India's G20 presidency, a consensus has been effectively fostered to establish a network for research and development as well as manufacturing for vaccines, therapeutics, and diagnostics.
- This initiative includes the creation of an accessible platform for open-source, interoperable digital solutions.
- An emphasis on bolstering readiness for health emergencies in terms of prevention, preparedness, and response concluded with a commitment to negotiate a legally binding convention, agreement, or other international instrument through the WHO by May 2024.
- Another significant outcome of the meeting was the launch of the Global Initiative Digital Health, designed to facilitate the sharing of digital assets and knowledge.
- This platform comprises four key pillars:
    - An investment tracker,
    - An "Ask" tracker to identify required technologies,
    - A library of available digital tools, and
    - A knowledge-sharing mechanism for implementing these technologies on a substantial scale.
- Acknowledging the necessity to enhance comprehension of long COVID and its multifaceted impacts on individual, societal, and economic aspects, participants also underscored the importance of long COVID surveillance and research.
- The commitment of G20 countries to strengthen dialogue through the G20 Joint Finance-Health Task Force was sustained.
- A notable achievement was the successful culmination of the **First Call for Proposals of the Pandemic Fund.**
    - These proposals align with the initial Call's three priorities,
        - Reinforcing disease surveillance,
        - Enhancing laboratory capabilities, and
        - Fortifying the public health workforce.
    - The Pandemic Fund, **endowed with $2 billion from the previous G20 presidency**.
    - It has already initiated funding proposals to augment critical health emergency preparedness, response, and resilience capabilities in low and middle-income countries.

- With growing concern over the escalation of zoonotic diseases, G20 member nations emphasized the incorporation of a collaborative and inclusive "**One Health Approach."**
- The countries committed to prioritizing the development of climate-resilient health systems, constructing sustainable healthcare supply chains with low greenhouse gas emissions, mobilizing resources for resilient and sustainable health systems, and facilitating cross-collaboration.

Inauguration of India's First 3D-Printed Post Office

Inside Story of the News:

Union Minister Ashwini Vaishnaw virtually inaugurated **India's pioneering 3D-printed post office situated in Bengaluru's Cambridge Layout.** The construction of this innovative establishment was concluded in an impressive 43-day timeframe, a remarkable two days ahead of the stipulated deadline. The post office was brought to fruition through the collaborative efforts of the multinational firm Larsen & Toubro Limited, with technological assistance hailing from IIT Madras.

- 3D printing, also recognized as additive manufacturing, assembles three-dimensional objects layer by layer, guided by computer-generated designs.
- In contrast to conventional manufacturing techniques that entail material removal, **3D printing is an additive process.**
- It employs various materials such as plastics, composites, and biomaterials to methodically craft objects with precision in terms of shape, size, strength, and color.
- The process commences with the creation of a 3D model of the object using computer-aided design (CAD) software.
- Subsequently, the digital model is dissected into slender horizontal layers, which serve as a blueprint for the printing device.
- 3D printing has revolutionized manufacturing by enabling rapid prototyping, curtailing production time, and mitigating material wastage.
- In the realm of medicine, 3D printing is instrumental in fabricating implants, prosthetics tailored to individual patients, and even functional organs.
- Customized medical tools and models, instrumental in surgical planning, significantly enhance patient outcomes.
- The automotive sector capitalizes on 3D printing for crafting intricate components, streamlining vehicle design, and generating prototypes for testing.
- The utilization of 3D printing extends across a multitude of industries, encompassing healthcare, automobile manufacturing, and aerospace.
- In a notable instance from this year's May, aerospace manufacturer Relativity Space launched a trial rocket entirely composed of 3D-printed components, measuring a towering 100 feet in height and 7.5 feet in width.
- During the zenith of the Covid-19 pandemic in 2020, the healthcare domain harnessed the capabilities of 3D printers to produce urgently needed medical equipment, including swabs, face shields, masks, and even components for repairing ventilators.

The National Manuscripts Bill 2023: A Pathway to Heritage Preservation

Inside Story of the News:

Sources within the Ministry of Culture have indicated that the government is in the process of formulating the National Manuscripts Bill 2023, with a potential introduction during the upcoming Winter Session of Parliament. As highlighted by the National Mission for Manuscripts (NMM), India boasts an estimated collection of 10 million manuscripts transcribed in 80 ancient scripts such as Brahmi, Kushan, Gaudi, Lepcha, and Maithili.

- The pivotal goals of this proposed legislation encompass
    - the comprehensive documentation and cataloguing of India's heritage texts on a global scale,
    - the accurate maintenance of information, and the delineation of conditions for consultation
- The bill envisions the establishment of the National Manuscripts Authority (NMA), comprising 10 members and chaired by the Minister of Culture.
- This body will also incorporate representatives from Culture, Finance, Education, and private entities.
- The NMA will be entrusted with overseeing the digitization, conservation, preservation, editing, and publication of manuscripts.
- Equipped with civil court powers, the NMA will be empowered to regulate manuscript access, conduct inquiries into thefts, and ensure safeguards against damage or theft.
- The NMA will have the capacity to acquire manuscripts from private owners based on the significance of their content.
- Compensation for such acquisitions will be determined by an expert committee.
- Manuscripts, handwritten compositions on materials like palm leaves, paper, cloth, and bark, are inscribed in both Sanskrit and regional languages. They date back at least 75 years.
- India possesses a vast trove of approximately 10 million manuscripts characterized by 80 ancient scripts.
- The National Mission for Manuscripts (NMM) is entrusted with their preservation.
- Notably, the Bakhshali manuscript, an ancient mathematical text, offers a glimpse into the early use of the concept of zero and hails from the third or fourth century A.D.

Pradhan Mantri Uchchatar Shiksha Abhiyan (PM-USHA): Empowering Higher Education

Inside Story of the News:

Fourteen States and Union Territories are currently pending to finalize a Memorandum of Understanding (MoU) with the Ministry of Education, which is a prerequisite for gaining access to funds under the Pradhan Mantri Uchchatar Shiksha Abhiyan (PM-USHA) for the upcoming three years to implement the National Education Policy (NEP).

- The MoU encompasses stipulations pertaining to planning, execution, and supervision, harmonizing State proposals with the NEP to facilitate seamless integration.
- This initiative affords States/Union Territories the flexibility to customize activities to suit their specific requirements, thereby optimizing resource allocation for enhanced efficacy.
- Furthermore, the States can identify districts of focus based on indicators like enrollment ratios, gender parity, and the representation of marginalized communities.
- Some State administrations have expressed reservations regarding the MoU, as it fails to address the need for supplementary funding to carry out NEP-driven reforms.
- While the States bear responsibility for 40% of the expenses associated with PM-USHA, the MoU does not provide transparent insights into funding mechanisms tailored for NEP-related transformations.
- In the context of the National Education Policy**, the Rashtriya Uchchatar Shiksha Abhiyan (RUSA) Scheme has been rebranded as the "Pradhan Mantri Uchchatar Shiksha Abhiyan (PM-USHA)" in June 2023.**
    - Originally launched as a Centrally Sponsored Scheme in October 2013, RUSA aimed to strategically fund higher education institutions across the nation.
- The core objectives of PM-USHA encompass the enhancement of access, equity, and quality in higher education through the systematic development of higher education at the state level.
- The goals also encompass the establishment of novel academic institutions, expansion and elevation of existing ones, creation of self-sustaining institutions focusing on quality education, professional management, and a strong research orientation.
- PM-USHA is designed to provide strategic funding to eligible state higher educational institutions.
- Funding is disbursed to states based on the comprehensive assessment of their State Higher Education Plans, which outline the strategies each state will employ to address issues of equity, access, and excellence in higher education.