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National and International News

INDIA- VIETNAM JOINT MILITARY EXERCISE VINBAX	**Context:** • The **5th edition of the Vietnam-India Bilateral Army Exercise (VINBAX) 2024** commenced on November 4, 2024, at Ambala, Haryana. **Key points:** • This edition marks a significant increase in scope with Bi-Service level participation for the first time by personnel of the Army and Air Force from both countries. • The exercise will be held from November 4 to 23 at **Ambala and Chandimandir.** • The aim of VINBAX is to enhance the joint military capability of both countries.
Europe's Proba-3 mission to arrive in India for launch aboard PSLV-XL by Isro	**Context**: • **Europe's Proba-3 mission,** comprising two satellites, is set to **arrive in India for its launch aboard ISRO's PSLV-XL** rocket in December 2024. • The mission aims to **study the Sun's corona** by creating an artificial solar eclipse, allowing for continuous observation of this crucial region. • This **collaboration between ESA and ISRO** marks a significant milestone in international space cooperation and showcases India's growing role in global space exploration. **About:** • **Proba-3** is a groundbreaking mission by the **European Space Agency (ESA)** aimed at demonstrating highly precise satellite formation flying. • It comprises **two small satellites** that will separate and fly in tandem, creating an artificial solar eclipse to **study the Sun's faint corona.** • This innovative approach allows for continuous observation of the corona, which is usually only visible during brief moments of total solar eclipses. • The mission will also validate advanced technologies like relative GPS navigation and autonomous formation flying, paving the way for future complex space missions
IL-35-Mediated Immunotherapy	**Context**: • Researchers have discovered a specific **protein called IL-35 that can protect the immune system** by lowering particular immune cells that produce inflammatory chemicals.

	• This, in turn, **reduces pancreatic cell infiltration**, a key contributor in type 1 and autoimmune diabetes mellitus. • **IL-35 presents a novel treatment option for diabetes,** offering hope for the growing global diabetes epidemic, especially among children and adolescents in developing countries. **IL-35:** • **Interleukin-35 (IL-35**) is a recently discovered cytokine with potent immunosuppressive properties. It plays a crucial role in maintaining immune tolerance and preventing autoimmune diseases. • IL-35-mediated immunotherapy is an emerging field that aims to harness the power of this cytokine to treat various immune-related disorders. **How it Works**: • IL-35 promotes the generation and function of regulatory T cells (Tregs), a specialized subset of T cells that suppress immune responses. • It inhibits the activation and proliferation of inflammatory T cells. • It reduces the production of pro-inflammatory cytokines. **Diabetes:** • Approximately 1 in 10 adults worldwide have diabetes, and over 90% of them have type 2 diabetes. • There are **two main types of diabetes: type 1 and type 2.** • **Type 1 diabetes**: It is an autoimmune disease that causes the body to attack and destroy the insulin-producing cells in the pancreas. • **Type 2 diabetes**: It is the most common form of diabetes and is caused by a combination of genetic and environmental. **Note:** • **World Diabetes Day was established in 1991 by the International Diabetes Federation (IDF) with support from the World Health Organization (WHO).** • **It became an official United Nations Day in 2006.**
Aditya-L1	**Context**: • The **first significant results from the Visible Emission Line Coronagraph (VELC**) payload onboard **India's Aditya-L1 solar mission** have been unveiled. • The **VELC instrument successfully captured data** allowing scientists to estimate the precise onset time of a coronal mass ejection (CME) from the Sun. **About:**

	• **Aditya-L1 is India's first space-based mission to study the Sun**. • It was launched by the Indian Space Research Organisation (ISRO) on September 2, 2023, and is positioned in a halo orbit around the Lagrange point 1 (L1) of the Sun-Earth system, approximately 1.5 million kilometers from Earth. **Key Objectives**: • **Study of the Sun's atmosphere:** Aditya-L1 carries seven payloads to observe the Sun's chromosphere and corona, focusing on solar activities and their impact on space weather. • **Real-time monitoring**: Its location at L1 provides continuous viewing of the Sun without any interruptions, enabling real-time monitoring of solar activities.
Global cleantech market to grow to $2 trillion by 2035	**Context**: • The **global clean technology market** is set to experience significant growth, **reaching a value of $2 trillion by 2035.** **Key points:** • This surge is driven by increasing global focus on sustainability and the transition towards renewable energy sources. • Key clean technologies such as solar energy, wind power, electric vehicles, and battery storage are expected to play a major role in this growth. • This expansion presents substantial opportunities for businesses, investors, and policymakers alike, while also posing challenges related to supply chain management, technological advancements, and policy frameworks