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Abort Mission-1 (TV-D1)

Context: ISRO successfully tested the Crew Escape System in its Gaganyaan mission during the TV-D1 launch on Saturday.

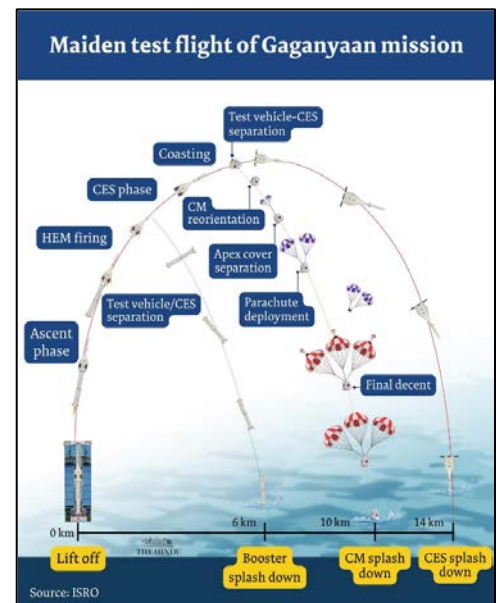
- The TV-D1 mission is the initial step in a series of tests that ISRO must complete before launching astronauts into space, joining a select group of countries with crewed space missions (United States, Russia/Soviet Union, China).
- Prioritizing safety, ISRO conducted a critical test of the Crew Escape System, which can separate the crew module from the launch vehicle in case of emergencies during launch, ensuring a safe splashdown for astronauts.
- The crew module's protection of astronauts begins at launch. During the Gaganyaan mission, the human-rated LVM3 rocket will experience acceleration four times that of gravity. The crew module shields astronauts from intense air friction and heat generated during this phase.
- However, once in space, there are no escape systems. The crew module is the sole safe haven for astronauts, providing protection in the zero-air, microgravity environment of low-Earth orbit. It must also shield astronauts from the Sun's intense radiation, as there are no atmospheric layers to act as a barrier.

➤ Mission objectives

- Flight demonstration and evaluation of the test vehicle subsystems
- Flight demonstration and evaluation of the CES, including various separation systems
- Crew Module characteristics and demonstration of deceleration systems at higher altitude and its recovery

➤ Gaganyaan Mission

- Gaganyaan is an ISRO mission aimed at sending a three-member crew to space for a mission lasting five to seven days by 2022.
- Prime Minister Narendra Modi announced the mission in his 2018 Independence Day address.
- ISRO plans to conduct two unmanned missions as part of Gaganyaan, with the first initially scheduled for December 2020 and the second for June 2021. The first unmanned mission was delayed due to disruptions caused by the COVID-19 pandemic.
- The Gaganyaan spacecraft will be positioned in a low Earth orbit (LEO) at an altitude of 300-400 kilometers.
- The estimated cost of the program is expected to be less than Rs. 10,000 crore.
- Gaganyaan is significant as India's first indigenous mission to send Indian astronauts into space. If successful, India will become the fourth country to send a human to space, joining the ranks of the US, Russia, and China.
- ISRO is responsible for spacecraft development, while Russia is assisting in astronaut training.



Vienna Convention on Diplomatic Relations

Context: Amidst the India-Canada standoff, the Canadian government has recalled 41 diplomats and their families from India.

- India recently sought "parity" with Canada, proposing a reduction in the number of Canadian diplomats in India to match India's presence in Canada, which stands at about 20 diplomats.
- This request came after a dispute sparked by Canadian Prime Minister Justin Trudeau's remarks in the Canadian Parliament in September 2023.
- Trudeau implied a potential link between the Indian government and the assassination of pro-Khalistan separatist leader Hardeep Singh Nijjar in Canada earlier that year. India rejected these allegations as "absurd" and "motivated."

➤ The Convention:

- The Vienna Convention on Diplomatic Relations (1961) is a United Nations treaty that establishes common principles and terms governing the treatment of diplomatic representatives to ensure friendly relations and open communication between countries.
- One significant principle outlined in the convention is diplomatic immunity, which grants diplomats exemption from certain laws and taxes in the host country. This privilege is designed to enable diplomats to carry out their duties without fear, threats, or intimidation from the host nation.
- Diplomatic immunity is derived from two conventions known as the Vienna Conventions: the 1961 Convention and the Convention on Consular Relations from 1963.
- Article 29 of the 1961 Convention states that the person of a diplomatic agent is inviolable, and they cannot be subject to arrest or detention. The receiving state is obligated to treat them with due respect and take measures to prevent any harm to their person, freedom, or dignity.

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- Currently, 193 countries have ratified the convention, making it legally binding on them. Ratification entails seeking approval for the treaty at the domestic level and enacting laws to implement it. India ratified the convention through the Diplomatic Relations (Vienna Convention) Act of 1972.

➤ **What does the Convention say about recalling?**

- Article 9 of the Vienna Convention allows the receiving state to declare a diplomatic agent as persona non grata without the need for explanation.
- The sending state must then either recall the individual or terminate their functions with the mission.
- If the sending state fails to comply within a reasonable timeframe, the receiving state can refuse to recognize the individual as a mission member.
- Article 11 of the convention enables the receiving state to set reasonable limits on the size of a diplomatic mission if there is no specific agreement in place.
- Parity in diplomatic presence is supported by the Vienna Convention.
- India cited concerns about continuous interference by Canadian personnel in its affairs as the reason for invoking parity.
- Russia and the United States have also requested the recall of each other's diplomats in the past, citing the principle of parity during periods of strained relations.

RBI's Integrated Ombudsman Scheme

Context: The Delhi High Court has criticized the RBI Ombudsman for issuing an order without providing a clear rationale, emphasizing the shortcomings in the Reserve Bank-Integrated Ombudsman Scheme, 2021.

➤ **About the Scheme**

- Established under Section 35A of the Banking Regulation Act, 1949, the Reserve Bank's Integrated Ombudsman Scheme serves as an appellate body for customer complaints when their financial institution fails to address the issue within 30 days.
- The Scheme amalgamates three pre-existing RBI Ombudsman schemes: the 2006 Banking Ombudsman Scheme, the 2018 Ombudsman Scheme for NBFCs, and the 2019 Ombudsman Scheme for Digital Transactions.
- Adhering to the concept of "One Nation-One Ombudsman," it provides a unified portal, email, and address for customers to file complaints.
- The Integrated Ombudsman Scheme now extends its coverage to non-scheduled primary co-operative banks with a deposit size of Rs 50 crore and above.
- Responsibility for representing the Regulated Entity and providing information regarding customer complaints falls on the Principal Nodal Officer, holding a rank of General Manager in a Public Sector Bank or equivalent.
- The scheme enhances the grievance redress mechanism for addressing customer complaints against RBI's regulated entities.
- The Appellate Authority in the integrated scheme is the Executive Director-in charge of the Consumer Education and Protection Department at the RBI.
- Customers gain access to a streamlined process, enabling them to file complaints, submit documents, monitor their complaint's status, and provide feedback through a single email address.
- A multilingual toll-free number offers information related to grievance redress, and these services are provided at no cost to bank customers and the general public.

➤ **Ombudsman**

- An ombudsman is a government official who addresses complaints from ordinary citizens concerning public organizations, with its origins in Sweden.
- This official, appointed by the Legislature, is responsible for handling complaints against service or administrative authorities.
- The need for an ombudsman in an organization arises for several reasons:
 - **Addressing Concerns:** An ombudsman provides the public with a platform to voice their grievances against an organization, allowing feedback that can lead to service improvement.
 - **Impartial Operation:** Ombudsmen work in an impartial, confidential, and independent manner, ensuring that they operate without influence from the organization in question.
 - **Efficiency and Cost Reduction:** Ombudsmen can investigate multiple complaints on the same topic in a single process, preventing duplication and excessive costs.
 - **Complaint Management:** Ombudsmen establish procedures for receiving and resolving complaints from the public, streamlining the process for both complainants and organizations.

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Rising cases of dengue

Context: According to a recent study, COVID-19 antibodies may have cross-reactivity with DENV-2, potentially exacerbating dengue infections.

- This study is the first to reveal that anti-SARS-CoV-2 antibodies could cross-react with DENV-2 (dengue virus 2) and potentially enhance its infection through antibody-dependent enhancement, which refers to the ability of antibodies from a previous infection to assist a virus in infecting more cells than it could on its own.
- The interaction between COVID-19 antibodies and dengue is a complex issue within the human immune system. Sometimes, antibodies generated in response to one virus can influence the body's response to another.
- Also, Johnson & Johnson's experimental pill has demonstrated efficacy against dengue fever in a small human challenge trial conducted in the United States.
- This is a noteworthy breakthrough as there are presently no specific treatments for dengue, and the disease is regarded as an increasing global health concern.

Dengue

- Dengue, also known as break-bone fever, is a viral infection transmitted by mosquitoes, primarily prevalent in tropical and subtropical regions.
- Many individuals infected with dengue may remain asymptomatic, but for those who exhibit symptoms, common ones include high fever, headaches, body aches, nausea, and rashes. Most patients typically recover within 1 to 2 weeks. However, severe cases may necessitate hospital care, and in some instances, dengue can be fatal.
- Individuals who experience a second dengue infection face a heightened risk of developing severe dengue.
- The symptoms of severe dengue often manifest after the initial fever has subsided. These symptoms include severe abdominal pain, persistent vomiting, rapid breathing, bleeding gums or nose, fatigue, restlessness, the presence of blood in vomit or stool, excessive thirst, pale and cold skin, and a general feeling of weakness.
- Preventative measures to reduce the risk of dengue include avoiding mosquito bites, particularly during daylight hours.
- At present, dengue treatment primarily involves alleviating symptoms with pain medication, as there is no specific cure for the disease.
- **Transmission:**
 - **Transmission through mosquitoes:** Dengue is transmitted to humans by infected female mosquitoes, primarily *Aedes aegypti*. Other *Aedes* species can also transmit the virus. The virus takes 8–12 days to incubate in the mosquito before it can be transmitted to a new host.
 - **Human-to-mosquito transmission:** Mosquitoes can get infected from viremic individuals, whether symptomatic or not. Transmission can occur 2 days before and after fever.
 - **Maternal transmission:** Possible maternal transmission during pregnancy, with potential risks to newborns.
 - **Other transmission modes:** Rare cases via blood products, organ donation, transfusions, and transovarial transmission in mosquitoes.
- **Global Burden:**
 - Dengue, according to the World Health Organization (WHO), is endemic in over 100 countries.
 - Approximately 3.6 billion people, accounting for 40% of the world's population, live in dengue-endemic regions.
 - Annually, around 400 million individuals contract the dengue virus, with 100 million falling ill, and 21,000 deaths attributed to dengue.
 - Studies indicate that dengue is the leading cause of acute febrile illness among US travelers returning from regions like South-central and Southeast Asia, South America, Mexico, and the Caribbean, largely due to increased international travel and the popularity of dengue-prone destinations.
 - As a result, dengue-related hospitalizations are increasing in the United States.

NEWS IN BETWEEN THE LINES

Rare Paintbrush Swift Butterfly



Recently, the rare paintbrush swift butterfly was sighted and documented for the first time in Himachal Pradesh's western Himalayas.

About Paintbrush Swift Butterfly:

- The paintbrush swift (*Baoris farri*), a rare butterfly species, was sighted and documented for the first time in Himachal Pradesh's Chamba district in **October 2022**.
- The paintbrush swift is rarely found in the western Himalayas and has not been photographed in Himachal Pradesh since its initial discovery in **1878**.
- Himachal Pradesh is home to **approximately 25%** of India's total butterfly species, making it a significant hotspot for butterfly diversity.
- The paintbrush swift was first described by **lepidopterist Frederic Moore** more than **145** years ago in the eastern Himalayas.

Habitat: The habitat distribution of the paintbrush swift is common in **northeast, central and south India** but rare in **Uttarakhand**.

Threats: The decline in the population of this butterfly is primarily attributed to habitat loss, **scarcity of larval host plants, increased pesticide use, deforestation** and the **effects of climate change**.

Conservation Status: The paintbrush swift butterfly is legally **protected in India under Schedule IV of the Wildlife (Protection) Act, 1972**.

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Dam Safety Act



Recently, India grapples with a dam safety crisis as it has nearly 6,000 large dams, with 80% of them aged over 25 years, posing significant safety risks.

About Dam Safety Act:

- The Dam Safety Act was passed in late 2021 as a legislative response to address the safety risks associated with India's aging dams.
- Approximately 80% of India's nearly 6,000 large dams are over 25 years old, posing safety risks due to aging and inadequate maintenance.
- The Act provides a legal framework to ensure the safety of dams in India and to prevent dam failure-related disasters.
- The Act aims to oversee the surveillance, inspection, operation and maintenance of specified dams, focusing on dams with heights exceeding 15 meters or between 10 meters and 15 meters with specific design and structural conditions.
- **Institutional Mechanism:** It establishes two national-level bodies - the National Committee on Dam Safety (NCDS) and the National Dam Safety Authority (NDSA) and two state-level bodies - State Committee on Dam Safety (SCDS) and State Dam Safety Organization (SDSO).

Anubhav Awards



The Department of Pension & Pensioners' Welfare is hosting the Anubhav Awards 2023 Ceremony in New Delhi today.

About Anubhav Awards:

- The Anubhav Awards are associated with the Anubhav Portal, which was launched in March 2015.
- The awards are designed to recognize and felicitate retiring or retired government employees for their commendable work, experiences and suggestions through write-ups submitted on the Anubhav Portal.
- In Anubhav Awards 2023, four Anubhav Awards will be conferred, along with nine Jury Certificates to encourage wider participation in the process.
- Awardees will receive a Medal, a Certificate and a cash prize of Rs. 10,000.
- This campaign resulted in the publication of 1901 Anubhav write-ups, the highest number since the portal's inception in 2015.

Antarctic Krill



About the Antarctic Krill:

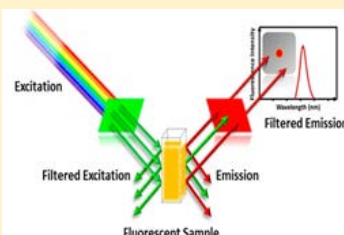
- Antarctic krill (*Euphausia superba*) is a pink and opaque species found in the waters around Antarctica.
- Krill often form dense and widespread swarms that can be visible from space during certain times of the year.

Role in the Food Chain:

- Krill feed on phytoplankton, which are microscopic, single-celled plants near the ocean's surface.
- They are a crucial food source for a wide range of animals, including fish, birds and baleen whales.
- Krill is also harvested for making fishmeal and oil, used in human health supplements.

Population Abundance: The British Antarctic Survey estimates that krill are one of the most abundant creatures on Earth, with approximately 780 trillion individuals (excluding larvae and eggs).

Fluorescence



About Fluorescence:

- Fluorescence is a process where an object absorbs light of higher energy (e.g., blue) and re-emits it at lower energy (e.g., red).
- In fluorescence, electrons absorb photons, jump to higher energy levels and release energy when returning to their original energy levels.
- Fluorescence does not involve a change in electron spin.

Applications: Fluorescence has numerous applications in various fields, including:

- **Lighting:** Fluorescent lamps use UV light to produce visible light.
- **Biological Research:** Fluorescent markers are essential for tracking molecules and processes in biology.

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	<ul style="list-style-type: none"> ➤ Materials Science: Fluorescence is used to study material properties. ➤ Forensic Science: It is used in crime scene investigations for detecting trace evidence.
<p style="text-align: center;">Place in News</p> <p style="text-align: center;">Marshall Islands</p>	<p>Recently, the United States signed a 20-year agreement with the Marshall Islands, providing economic assistance exceeding \$2 billion.</p> <p>Marshall Islands (Capital: Majuro)</p> <p>Location: The Marshall Islands is situated in the Northwestern Pacific Ocean. It is west of the International Date Line and north of the equator.</p> <p>Geographic Features:</p> <p>Atolls and Islands: The Marshall Islands is primarily composed of 29 coral atolls and five islands.</p> <p>Island Chains: The Marshall Islands are divided into two major island chains - Ratak in the east and Ralik in the west.</p> <p>Shark Sanctuary: The country declared a vast shark sanctuary to protect these marine creatures.</p> <p>Historical Background:</p> <ul style="list-style-type: none"> ➤ The Marshall Islands has a history that includes Spanish and German influence, Japanese occupation during World War I and U.S. administration post-World War II, which involved nuclear tests. ➤ The nation gained its independence in 1979 through a Compact of Free Association with the United States. 
<p style="text-align: center;">Personality in News</p> <p style="text-align: center;">Muhammad Yunus</p>	<p>Muhammad Yunus (born 28 June 1940)</p> <p>Muhammad Yunus is a Bangladeshi social entrepreneur, banker, economist and civil society leader.</p> <p>Award and Honored:</p> <ul style="list-style-type: none"> ➤ He received the Nobel Peace Prize in 2006 for his role in promoting social and economic development. ➤ He was awarded the Indira Gandhi Peace Prize in 1998 for his role in founding the Grameen Bank, which had a significant impact on poverty alleviation. ➤ He received the United States Presidential Medal of Freedom in 2009 for his exceptional contributions to society, particularly in the field of microcredit and poverty alleviation. ➤ He was the recipient of the prestigious Ramon Magsaysay Award in 1984, recognizing his significant contributions to society, particularly his work with the Grameen Bank <p>Contributions:</p> <ul style="list-style-type: none"> ➤ Yunus is the founder of the Grameen Bank, established in 1983, known for pioneering the concept of microcredit and microloans for impoverished individuals, particularly women. ➤ He introduced the concept of microcredit, offering small loans on easy terms to empower the poor and reduce poverty. ➤ Yunus advocates for a world with "Three Zeros": zero poverty, zero unemployment and zero net carbon emissions. 

POINTS TO PONDER

- ❖ What is the theme of 'Ayurveda Day 2023'? - **Ayurveda for One Health**
- ❖ Saint-Belec slab, is a 4,000-year-old slab, was discovered in which country? - **France**
- ❖ At which place, "Bharat Tex 2024" to be organised from February 26-29, 2024? - **New Delhi**
- ❖ In which Himalayan region have geologists unearthed coral reef fossils at an elevation of 18,000 feet above sea level? - **Ladakh**
- ❖ Who has been given the "Award for Global Leadership" by the Harvard Law School? - **Justice D.Y. Chandrachud**

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