1. **Kamchatka Peninsula** : Recently, a powerful 8.8-magnitude earthquake struck Russia's remote **Kamchatka Peninsula**, marking one of the strongest quakes in recent history.
    - The tremor triggered widespread tsunami warnings across the northern Pacific, leading to alerts in Hawaii, Alaska, Japan, and several other coastal regions.

- **About Kamchatka Peninsula :** Situated in far eastern Russia, between the Sea of Okhotsk (west) and the Pacific Ocean and Bering Sea (east).
    - **Geological Significance**: One of the world's most concentrated areas of geothermal activity.
    - **Volcanic Zone**: Located on the Pacific Ring of Fire; home to over 150 volcanoes, including 29 active ones.
    - **Administrative Region**: Part of Kamchatka Krai.
    - **Nickname**: Known as the "land of fire and ice" due to its volcanic and glacial landscape.
    - **Population:** One of the world's lowest population densities (less than 1 person per sq. km)
    - **Climate**: Very harsh, with long, cold winters that have a lot of snow, and cool, wet summers.
    - **Highest Point**: Klyuchevskaya Sopka (a stratovolcano in the Eastern Range).
    - **Regional Capital**: Petropavlovsk-Kamchatsky.
    - **Kuril Islands**: The Kuril Island chain extends from the southern tip of Kamchatka toward Japan's northern Hokkaido Island.

2. **Divya Drishti Exercise :** Recently, the Indian Army conducted a high-altitude technology demonstration exercise called **"Divya Drishti"** in East Sikkim.
    - **About Divya Drishti Exercise :** Aimed to validate **cutting-edge battlefield technologies** including **artificial intelligence (AI)-enabled sensors, UAVs, and real-time command systems**.
        - **Technologies Demonstrated: AI-enabled sensor networks** for real-time threat detection and situational awareness.
            - ✓ **Integration of drones and UAVs** with ground-based platforms for advanced surveillance and targeting.
            - ✓ **Sensor-to-shooter systems** to ensure swift and precise battlefield responses.

- ✓ **Secure communication networks** enabling seamless, encrypted data flow between troops and command centres.
- **Participants:** Executed by troops from the **Trishakti Corps**, headquartered in **Sukna, West Bengal**.
- **Significance:** Part of the Indian Army's **"Decade of Transformation"** roadmap.
  - ✓ Supports the **Atmanirbhar Bharat** initiative (indigenous technology).
  - ✓ Reinforces India's readiness for **future warfare** and operations in complex terrains.

3. **Global Gas Flaring Tracker Report:** Recently, the **World Bank's 2025 Global Gas Flaring Tracker Report** raised concerns over a sharp rise in global emissions from gas flaring.
   - **Key Findings:** According to the report, **2024 recorded the highest flaring volumes since 2007**, leading to the release of **389 million tonnes (Mt) of CO_2-equivalent** emissions.
     - Of this, **46 MtCO_2e** came from **unburnt methane**, a highly potent greenhouse gas.
     - The **flare volume** rose to **151 billion cubic metres (bcm)** in 2024, up from 148 bcm in 2023.
     - This gas loss is nearly equal to **Africa's total annual gas consumption** (162 bcm).
     - The **top nine flaring countries** (Russia, Iran, Iraq, US, Venezuela, Algeria, Libya, Mexico, Nigeria) accounted for **76%** of global flaring in 2024 (up from 65% in 2012).
     - **Iran, Nigeria, US, Iraq, and Russia** saw the largest volume increases, together contributing an extra **4.6 bcm** in 2024.
   - **About Gas flaring**: Practice of burning off natural gas that is released during crude oil extraction (known as associated gas).
     - It is commonly carried out in oil fields, especially remote or offshore sites where infrastructure to capture, store, or transport the gas is unavailable.
     - Despite being **wasteful and polluting**, flaring continues because it is a **relatively safe disposal method** for excess gas.
4. **Study on Respiratory Infections :** Recently published in Nature, a groundbreaking study has revealed that common respiratory infections like **COVID-19 and influenza** can awaken dormant **breast cancer cells** lodged in the lungs.
   - **About Breast Cancer :** One of the most common cancers in women and people assigned female at birth (AFAB).

- Caused by uncontrolled growth of cancerous cells in the breast.
- About 80% of cases are invasive, meaning the cancer can spread to other parts of the body.

- **Key Finding:** Using mouse models that mimic human breast cancer metastasis, researchers discovered that **SARS-CoV-2 and influenza infections reawaken dormant cancer cells** (DCCs) in the lungs.
  - This reactivation led to **rapid development of aggressive metastatic tumors** within days.
  - **Molecular Trigger: Interleukin-6 (IL-6)**, a pro-inflammatory molecule released during infections, was identified as the **key driver of DCC reactivation**.
    - ✓ Blocking IL-6 could potentially **prevent metastasis following respiratory infections**.
  - **Human Data Reinforces the Risk:** Among cancer survivors (in remission ≥5 years), those infected with COVID-19 had **nearly twice the risk of cancer-related death** (excluding COVID fatalities).
    - ✓ Among 36,000+ breast cancer patients, those with COVID-19 were **50% more likely to develop lung metastases** compared to uninfected peers.
  - The study highlights the **importance of vaccinations and continued medical follow-up** for cancer survivors.
  - The research deepens awareness of how **post-viral effects extend beyond the acute illness**.

5. NISAR : Recently, the **NASA-ISRO Synthetic Aperture Radar (NISAR)** satellite was successfully launched from the Satish Dhawan Space Centre in Sriharikota aboard the **GSLV-F16 rocket**.

- The launch marks a major milestone in Indo-US space collaboration and global Earth observation efforts.

- **About NISAR :** First satellite jointly developed by ISRO and NASA.
  - **World's first** Earth observation satellite with **dual-frequency SAR** (Synthetic Aperture Radar).
    - ✓ **L-band radar (1.257 GHz)** from **NASA**: Penetrates forests and soil layers to detect **ground deformation and subsurface movement**.
    - ✓ **S-band radar (3.2 GHz)** from **ISRO**: Optimised to detect **surface-level changes** like crop growth, biomass, and water levels.
  - Enables **all-weather, day-and-night imaging**, even through **clouds, smoke, or vegetation**.
  - **Mission lifespan**: 5 years.

- **About Geosynchronous Satellite Launch Vehicle (GSLV) :** A launch vehicle developed and operated by **ISRO** to place satellites into **Geosynchronous Transfer Orbits (GTO)**.
  - ✓ GSLV is larger and more powerful than ISRO's Polar Satellite Launch Vehicle (PSLV).
  - ✓ **GSLV-F16** is the **18th launch** of India's GSLV and **12th launch using India's own cryogenic upper stage**, which helps carry heavier satellites.
  - ✓ The rocket used a **4-metre wide, dome-shaped (ogive) nose cone** to protect the NISAR satellite during launch.
  - ✓ This is the **first time a GSLV rocket has placed a satellite (NISAR) into a Sun-Synchronous Polar Orbit**, instead of its usual Geosynchronous Transfer Orbit.

6. **CRIB Blood Group:** Recently, a new blood group called as **CRIB** previously unidentified anywhere in the world, has been discovered in a South Indian woman from Kolar district, Karnataka.
   - **About CRIB Blood Group:** A newly identified blood group that belongs to the **Cromer (CR) blood group system**.
     - The name **CRIB** stands for **'Cromer India Bangalore'**, acknowledging its discovery in India.
     - This is the **first time this blood group has been identified anywhere in the world**.
     - The discovery was officially announced at the **35th Regional Congress of the International Society of Blood Transfusion (ISBT)** in **Milan, Italy**.
     - After **10 months of molecular testing and research**, international experts confirmed the presence of a **new antigen** within the Cromer system.
     - The naming and classification of new blood antigens are governed by the **International Society of Blood Transfusion (ISBT)**.
   - **Importance :** The **Cromer blood group system** includes **12 high-frequency and 3 low-frequency antigens** found on a protein called **decay-accelerating factor (DAF)**.
     - Identifying new antigens like CRIB improves: **Global transfusion safety**, **Compatibility testing** and **Donor-recipient matching** in critical situations such as surgeries, organ transplants, and emergencies.
7. **Scheme for Women Cooperatives:** Recently, the **National Cooperative Development Corporation (NCDC)** has launched dedicated schemes to advance women-led development and cooperative entrepreneurship, aligning with the broader vision of **Atmanirbhar Bharat**.

- **Key Schemes for Women Cooperatives:**
  - **Swayamshakti Sahakar Yojana:** Aimed at enhancing access to **affordable and reliable financial services** for poor women, this scheme:
    - ✓ Enables **Self Help Groups (SHGs)** and federated cooperatives to access **bank credit**
    - ✓ Supports **collective economic activities and sustainable livelihoods**
    - ✓ Eligible institutions include Primary Agricultural Credit Societies**,** District Central Cooperative Banks**,** State Cooperative Banks, and **SHG** Federations
  - **Nandini Sahakar Scheme:** Designed as a **women-focused entrepreneurial support framework**, this scheme provides:
    - ✓ **Financial assistance**, **interest subvention**, and **credit support**
    - ✓ Guidance on **business model development**, **enterprise planning**, and **capacity building**
    - ✓ Support for women cooperatives in all sectors **except urban housing**

8. Right to Information (RTI) : Recently, civil society groups and media organizations have raised serious concerns over the **Digital Personal Data Protection (DPDP) Act, 2023**, claiming that it undermines India's **Right to Information (RTI)** framework.

- **About RTI:** A key legislation that promotes **transparency and accountability** in government functioning. It allows Indian citizens to **seek information from public authorities**, reinforcing the **democratic right to know**.
  - Introduced through the **RTI Act, 2005**, it ensures **transparent and responsible governance**.
- **About DPDP Act, 2023** is a legal framework enacted to **protect the personal data of individuals** in the digital age.
  - It ensures that personal data is **processed only with the individual's consent**, safeguarding **privacy and data rights**.
  - **Key Objectives:** To regulate the **processing of digital personal data**.
    - ✓ To establish provisions ensuring **privacy, consent, and data protection** for individuals.
  - Applicable to the **processing of digital personal data**: **Within India**, whether collected online or offline (and later digitized).
    - ✓ **Outside India**, if related to offering **goods or services to individuals in India** (data principals).