1. **Global Emerging Tech Index:** Recently, the newly released Critical and Emerging Technologies Index placed India behind major global tech leaders, including the United States, China, and several European nations.
   - **About Critical and Emerging Technologies:** Refer to cutting-edge, fast-evolving innovations that hold the potential to greatly influence a nation's security, economy, and global standing.
     - They are termed "critical" due to their strategic importance and "emerging" because they are still in the process of development and are expected to shape the industries of the future.
   - **About Global Emerging Tech Index :** Developed using public and commercial data, ranks countries on their technological capabilities across five sectors based on the following weightage: **Semiconductors** – 35%, **Artificial Intelligence** – 25%, **Biotechnology** – 20%, **Space** – 15% and **Quantum Technology** – 5%
     - **Sector-wise evaluation** through weighted pillars: **Funding**, **Talent**, **Core Technologies**, **Infrastructure**, **Global Influence**
   - **Why India Lags Behind:** Weak R&D and limited skilled workforce in chips and quantum.
     - Lack of synergy between government, academia, and industry.
     - Weak Infrastructure like limited chip fabrication and quantum labs.
2. **Kishanganga and Ratle hydroelectric Projects :** Recently, India approached the World Bank with a request to halt the ongoing arbitration proceedings over two contested hydropower projects — Kishanganga and Ratle.
   - **About Kishanganga Hydroelectric Project (Capacity-330 MW) :** Located in Bandipora district of Jammu & Kashmir, is a run-of-the-river scheme on the Kishanganga River.
     - Features a 37-meter-high dam and a 23.25 km diversion tunnel leading to an underground powerhouse.
   - **About Kishanganga River:** A transboundary river flowing through India and Pakistan, it is known as **Neelum River** in Pakistan. It is a significant tributary of the **Jhelum River**, which itself is a part of the Indus River system.
     - **Origin:** The river originates from **Krishansar Lake**, located near Sonamarg in the Ganderbal district of Jammu and Kashmir, India.

- **Length:** Approximately **245 km** (about 50 km in India and 195 km in Pakistan).

- **About Ratle Hydroelectric Project (Capacity- 850 MW):** Run-of-the-river project on the Chenab River in Kishtwar district, Jammu & Kashmir.
  - Includes a 133-meter-tall concrete gravity dam and an underground powerhouse on the river's right bank.
- **About Chenab River:** A major river flowing through both India and Pakistan. Known as Chandrabhaga in its upper reaches.
  - **Origin**: Formed by the confluence of the Chandra and Bhaga rivers at Tandi in Lahaul and Spiti, Himachal Pradesh.
  - **Tributary**: It is one of the major tributaries of the Indus River.
  - **Length**: Approximately 605 miles (974 km).
  - **Main Tributaries**: Miyar Nalla, Sohal, Thirot, Bhut Nalla, Marusudar, and Lidrari.

3. **State of the Climate in Asia 2024 Report :** Recently, the **World Meteorological Organization's (WMO) State of the Climate in Asia 2024 report** revealed that Asia experienced one of its warmest years on record, with average temperatures rising by 1.04°C above the 30-year norm.
   - **Key Findings:** The **warming trend from 1991–2024** is nearly **double** that of the 1961–1990 period.
     - Asia is warming nearly twice as fast as the global average.
     - **29 tropical cyclones** occurred across the region.
     - **Marine heatwaves** reached a record extent of **15 million sq. km**, especially severe in: Northern Indian Ocean, Japan, Yellow and East China Seas.
     - **23 out of 24 glaciers** in High Mountain Asia (Himalayas, Karakoram, Pamir, Hindu Kush) lost mass.
   - **Impact on India:** Among the countries **most affected** by the regional climate shifts in 2024.
     - Over 450 deaths **due to extreme heatwaves** with temperatures reaching **45–50°C**.
     - **Cyclone Remal, Fengal, Dana** made landfall in India, killing around 90 people
     - **Cyclone Asna**, from the Arabian Sea, caused flooding in **Gujarat** and resulted in 50 deaths
     - Reduced winter snowfall and extreme summer heat accelerated glacier melting.

- **About WMO**: An **intergovernmental organization** with 192 Member States and Territories, including **India** (**HQ: Geneva, Switzerland**)
  - It evolved from the **International Meteorological Organization (IMO)**, which was established after the **1873 Vienna International Meteorological Congress**.
  - formally established with the ratification of the **WMO Convention on 23rd March 1950**.
  - It serves as the specialized agency of the United Nations for: **Meteorology** (weather and climate), **Operational hydrology** and **Related geophysical sciences**

4. **Household Income Survey:** Recently, the Ministry of Statistics and Programme Implementation (MoSPI) announced that it will conduct the country's first comprehensive **Household Income Survey in 2026.**
   - **About Nationwide Household Income Survey :** Aimed at generating robust and reliable data on income distribution across India for the first time.
     - **Survey Important:** The ministry flagged an "urgent need" for such a survey to capture structural shifts in employment, technology adoption, and income dynamics—areas where existing data is either limited or indirect.
   - **Why the Income Survey Matters:**
     - **True Picture of Inequality**: Consumption data often masks real income gaps. A direct income survey will help understand income disparities and distributional effects of growth.
     - **Improved Targeting of Welfare Schemes**: Better income data enables more precise eligibility criteria for subsidies and social programs.
     - **Global Data Alignment**: India has lagged behind countries like Brazil, the U.S., and South Africa, which regularly publish household income distribution data.
5. **Full Functional Literacy:** Recently, Tripura was officially declared a fully literate state, becoming the third in India to achieve this milestone after Mizoram and Goa.
   - The announcement was made under the **ULLAS** – Nav Bharat Saaksharta Karyakram, the Government of India's flagship adult education initiative.
   - **Functional literacy** refers to an individual's ability to apply reading, writing, and numeracy skills in daily life for personal development and active participation in society.

- **About ULLAS :** Launched in 2022 as a centrally sponsored scheme by the Ministry of Education.
  - Aims to achieve universal literacy in India by 2030, in line with the National Education Policy (NEP) 2020.
  - Focuses on inclusive learning for adults aged 15 years and above who missed out on formal education.
  - **Five Core Components of the Scheme:** Foundational Literacy and Numeracy, Critical Life Skills, Basic Education, Vocational Skills and Continuing Education
  - **Nationwide Impact of the ULLAS Scheme:** Over 2.40 crore learners and 41 lakh volunteer teachers are registered on the ULLAS Mobile App.

6. **Green Ammonia :** Recently, in a significant move toward decarbonizing India's core industrial sectors, the Solar Energy Corporation of India (SECI) issued its first large-scale tender for the supply of Green Ammonia, marking a key initiative under the National Green Hydrogen Mission.

- **About Green Ammonia:** Produced using **hydrogen derived from water electrolysis** and **nitrogen extracted from air**.
  - These are combined using the **Haber-Bosch process**, which is powered by renewable electricity.
  - **Key Uses** : **Fuel for Engines**: Alternative to diesel and marine fuel oil in locomotives & ships.
    - ✓ **Power Generation**: Can be used as a clean fuel source for generating electricity.
    - ✓ **Fertilizer Production**: Serves as a building block for manufacturing fertilizers in agriculture.
    - ✓ **Industrial Feedstock**: Used in industries for applications such as water purification and pharmaceutical manufacturing.
- **Haber Process Explained**: Involves reacting **hydrogen and nitrogen** at high temperature and pressure to produce **ammonia (NH_3)**.
  - The entire process is **100% renewable and carbon-free** in green ammonia production.
- **About Ammonia:** A **colorless** and **highly irritating gas** with a sharp, suffocating odor.
  - Easily dissolves in water to form **ammonium hydroxide**, which can cause irritation and burns. Compressed into a clear liquid for transport in steel cylinders and, while not highly flammable, its containers can explode under high heat.

7. **NAVYA Initiative :** Recently, in a landmark step towards women-led development, the Government of India launched a new initiative — **NAVYA (Nurturing Aspirations through Vocational Training for Young Adolescent Girls)** — in Sonbhadra, Uttar Pradesh.
   - **About NAVYA:** A joint pilot initiative of the **Ministry of Women and Child Development (MWCD)** and the **Ministry of Skill Development and Entrepreneurship (MSDE)** under the larger vision of **Viksit Bharat@2047**.
     - **Target Group**: Adolescent girls aged **16–18 years**, with minimum Class 10 education.
     - **Objective**: To provide vocational training in non-traditional job roles, especially in underserved regions
     - **Coverage**: **27 districts** across **19 states**, including: **Aspirational Districts** and **Districts from North-Eastern States**
     - **Significance :** Bridges Gender-Skilling Gap in non-traditional fields with low female participation.
       - ✓ Targets Aspirational Districts and North-East India to ensure inclusive, last-mile impact.
       - ✓ Empowers Young Women by enhancing confidence, employability, and economic independence.
8. **Gene-Edited (Ged) Rice Varieties:** Recently, a group of leading agricultural scientists from across India expressed serious concerns over the Union Government's decision to release **gene-edited (GEd) rice varieties**, calling the move "premature" and potentially harmful to farmers, biodiversity, and seed sovereignty.
   - **Released Varieties: DRR Rice 100 (Kamala):** Developed by ICAR–Indian Institute of Rice Research, Hyderabad; based on Sambha Masuri (BPT-5204).
     - **Pusa DST Rice 1:** Developed by ICAR–Indian Agricultural Research Institute, Delhi; based on Cotton Dora Sannalu (MTU 1010).
   - **Key Concerns:** Uses CRISPR-Cas9, a foreign-origin genome editing technology that poses risks of off-target mutations, potentially affecting crop traits and food safety.
     - Possible contamination of indigenous rice **germplasm**, threatening India's agro-biodiversity and could harm India's $1.2 billion organic rice export market**.**
     - May lead to farmer dependency, drawing parallels with the **Bt cotton experience (2002)**.