

Current Affairs (2023): Science & Technology At a Glance

* Aditya-L1 Mission

* Recently, the Indian Space Research Organisation (ISRO) has accomplished the launch of Aditya-L1, its inaugural Solar Mission.

* Aditya L1 will study the Sun's corona, Sun's photosphere, chromosphere, Solar Emissions, Solar Winds and Flares, and Coronal Mass Ejections (CMEs), and will carry out round-the-clock imaging of the Sun.



* Chandrayaan-3 Mission

* Chandrayaan-3 is India's 3rd Lunar Mission and 2nd attempt at achieving a soft landing on the moon's surface.

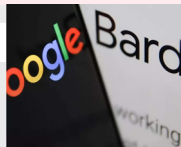
* On July 14, 2023, Chandrayaan-3 took off from the Satish Dhawan Space Centre at Sriharikota. The spacecraft seamlessly entered lunar orbit on August 5, 2023. The historic moment unfolded when the lander made a successful touchdown **near the Lunar south pole on Aug 23, 2023.**

* India- **4th country** in the world to achieve this feat, joining the ranks of the United States, Russia, and China.

* ISRO conducted recovery trials along with Indian Navy as a part of an ambitious **Gaganyaan Mission 2024.** The trials were conducted at the Water Survival Test Facility, Kochi.

* **Start-up firm IG Drones**, which was born out of Veer Surendra Sai University of Technology (VSSUT) campus in Odisha's Sambalpur has developed a **5G-enabled drone** that is capable of **vertical take-off and landing.** **Skyhawk drone** can carry a 10 kg payload and has an endurance of around five hours.

* **Google** recently launched "**BARD**" similar to Chat GPT to counter its rival Microsoft product. It is a conversational search engine working similar to that of Chat GPT designed and created by Google two years ago. Google is launching now as a countermeasure to Microsoft.



* Prime Minister Modi launched an app called "**Call Before You Dig**" to prevent uncoordinated digging that can cause damage to underground utility assets, such as optical fiber cables.

* The Union Cabinet chaired by the Prime Minister has approved the **National Quantum Mission (NQM)** to aid Scientific and Industrial Research and Development in Quantum Technology. The mission planned for 2023-2031 aims to **Seed, Nurture and Scale up Scientific and Industrial R&D** and create a vibrant & innovative **ecosystem in Quantum Technology (QT).** India's first quantum computing-based telecom network link has been made operational between Sanchar Bhawan and National Informatics Centre office in New Delhi.



* Union Minister of Information & Technology, Ashwini Vaishnaw, announced the Introduction of the **Bharat 6G Alliance** as India acquires 200 patents relating to 6G. India has taken a significant stride forward in the field of Telecommunications, with the acquisition of over 200 patents for 6G Technology.

* The **first 3D-printed post office** in India, situated in Bengaluru's Cambridge Layout near Ulsoor, was inaugurated by Union Minister Ashwini Vaishnaw. The post office, encompassing an area of 1,021 square feet, was swiftly completed in just 43 days.

* **R21/Matrix-M Malaria Vaccine**- World Health Organization (WHO) recommended **2nd new vaccine, R21/Matrix-M,** for the prevention of malaria in children. First vaccine was **RTS, S /AS01 vaccine,** which received a WHO recommendation in 2021.

* **Akira Ransomware**- The Computer Emergency Response Team of India (CERT-In) issued an alert for ransomware dubbed "Akira" which has emerged as a significant cybersecurity threat.

* **GSAT-24**- Direct-to-home (DTH) company **Tata Play** is set to expand its bandwidth capacity by 50% by adding 24 new Ku-band transponders on the communication satellite GSAT-24.

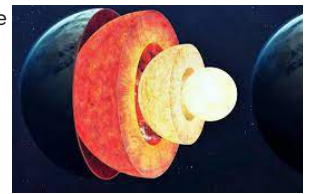
* **Carbon-Enhanced Metal-Poor (CEMP) Star:** Scientists at the Indian Institute of Astrophysics, Bangalore have discovered a unique star named **HE 1005- 1439** classified as a Carbon-Enhanced Metal-Poor (CEMP) star.

* **Spaceport**- The Centre has approved the establishment of a new spaceport in Kulasekarapattinam, Tamil Nadu. A spaceport, also known as a **Cosmodrome** or launch facility, is a specialized site designed for launching spacecraft, rockets, and satellites into space.

* **Indian Made MRI Scanner**- The 1st India-made MRI scanner to be launched for clinical work. It is developed under the **National Biopharma Mission,** by Voxel grids Innovations Pvt Ltd.

* **National Automated Fingerprint Identification System (NAFIS)**- India has inaugurated a National Automated Fingerprint Identification System (NAFIS). It is a country-wide searchable database of Crime and Criminal-related fingerprints.

* The recent frequent Earthquakes have helped scientists discover a new core. This **5th inner core is a solid ball of Nickel and Iron** and is the innermost layer. So far scientists believed that there are only four layers in the earth.



* A **Deepfake video** showing an Indian actress has sparked outrage and concern over the misuse of artificial intelligence (AI) to create realistic but fake videos, also known as **Deepfakes.** Deepfakes are synthetic media that use AI to manipulate or generate visual and audio content, usually with the intention of deceiving or misleading someone.

* The recently launched **Near Infrared Camera (NIRCam)** is the primary imaging instrument of the **James Webb Space Telescope (JWST)** covers the infrared wavelength range from 0.6 to 5 microns, making it an invaluable tool for studying various celestial objects.



* The **World's First Robotic Check-In Assistant,** named Sara, is the latest addition to Emirates' services. With the latest innovation, the airlines aim to improve the customer experience and streamline the check-in process.

* The Indian Government is developing a comprehensive "**Risk-Based**" framework to enforce age-gating on social media and other internet intermediaries, requiring users to access these services **only with Parental Consent.**

* India has achieved a remarkable milestone in its polar research pursuits with the launch of its inaugural **Winter Expedition to the Arctic.** This groundbreaking venture, initiated at Prithvi Bhavan in New Delhi, is poised to unravel the profound impact of the Arctic on **Global Climate, Sea Levels and Biodiversity.**



* Scientists have achieved a remarkable feat by creating a lab-grown "**Human Embryo**" model using stem cells and chemicals, without using an egg or sperm shedding light on early embryo development.

* **Brainware**- Scientists have seamlessly integrated brain-like tissue with electronics to create Brainware, an 'organoid neural network (ONN)' capable of **recognizing voices and solving complex mathematical problems.**

* **Mosquitofish**- Various regions in Andhra Pradesh, Odisha, and Punjab have witnessed the release of mosquitofish into local water bodies as a measure to combat the increasing mosquito menace. Mosquitofish, native to fresh waters of the southeastern United States, are known for their appetite for mosquito larvae.