UNCCD COP 15

❖ Context

➢ Recently, 15th Conference of Parties (COP15) of the United Nations Convention to Combat Desertification (UNCCD) was held in Abidjan, Côte d'Ivoire with the theme - **'Land. Life. Legacy: From scarcity to prosperity'**.

❖ Key Commitments Made

- Accelerate the restoration of **one billion hectares** of degraded land **by 2030** by:
  - Improving data gathering and monitoring.
  - Establishing a new partnership model for **large-scale integrated landscape investment programmes.**
- Establish an **Intergovernmental Working Group on Drought for 2022-2024** to support a shift from reactive to proactive drought management.
- Improve women's involvement in land management, promote land-based youth entrepreneurship, address forced migration and ensure greater synergies among three Rio conventions.

❖ Key Initiatives Launched

- **Business for land initiative:** It will lead to establishment of a pledge programme where businesses can pledge support for land degradation neutrality which will be connected with LDN projects/partnerships.
- **Sahel Sourcing Challenge:** To enable communities growing the **Great Green Wall** to use technology to monitor progress, create jobs and commercialise their produce such as baobab juice, moringa oil and shea butter.
- **Droughtland:** A new public awareness campaign that aims to showcase solutions and rally global action on drought. The campaign will also be featured during **UN Desertification and Drought Day (17 June)**, hosted this year by Spain.

❖ Reports Launched

1. **Global Land Outlook 2 :**
   i. It reported up to **40% of all ice-free land is already degraded**, with dire consequences for climate, biodiversity and livelihoods.
   ii. Business as usual will, **by 2050**, result in **degradation of 16 million sq. kms**. (almost the size of South America), with 69 gigatonnes of carbon emitted into the atmosphere.
   iii. But land restoration would help reduce the estimated 700 million people at risk of being displaced by drought by 2030.
2. **Drought in Number 2022.**
3. **South African thematic Report** - part of Global land outlook series.
4. **Study on Differentiated Impacts of Desertification, Land Degradation and Drought on Women and Men** - women are twice more affected by these issues and the burden of unpaid care and domestic work increases.
5. **Sand and Dust Storms Compendium.**

SpiceJet Faces Ransomware Attack

❖ Context:

➢ Several flights of SpiceJet were delayed and cancelled recently after the **airline faced ransomware attack.**

❖ What are Ransomeware?

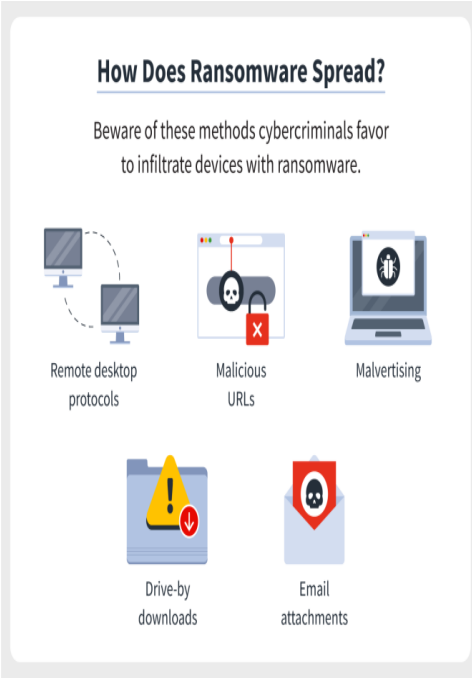
- **Ransomware is a type of malicious software** (malware) that threatens to publish or blocks access to data or a computer system, usually by encrypting it, until the victim pays a ransom fee to the attacker.
- In many cases, the ransom demand comes with a **deadline**. If the victim doesn't pay in time, the **data is gone forever or the ransom increases.**
- Cybercriminals will attack any consumer or any business and victims coming from any industry.

❖ Who is At Risk?

- Any device connected to the internet is at risk of becoming the next ransomware victim.
- Ransomware scans a **local device and any network-connected storage**, which means that a vulnerable device also makes the local network a potential victim.
- If the local network is a business, the **ransomware could encrypt important** documents and system files that could halt services and productivity.

❖ Prevention:

- Prevention for ransomware attacks typically involves setting up and **testing backups as well as applying ransomware** protection in security tools.
- Security tools such as email protection gateways are the first line of defense, while endpoints are a secondary defense.
- **Intrusion Detection Systems** (IDSs) are sometimes used to detect ransomware command-and-control to alert against a ransomware system calling out to a control server.
- **Examples:** WannaCry, CryptoLocker, CryptoLocker, Bad Rabbit, REvil, Ryuk etc.



News in Between the Lines

Kolkata's Biodiversity Register

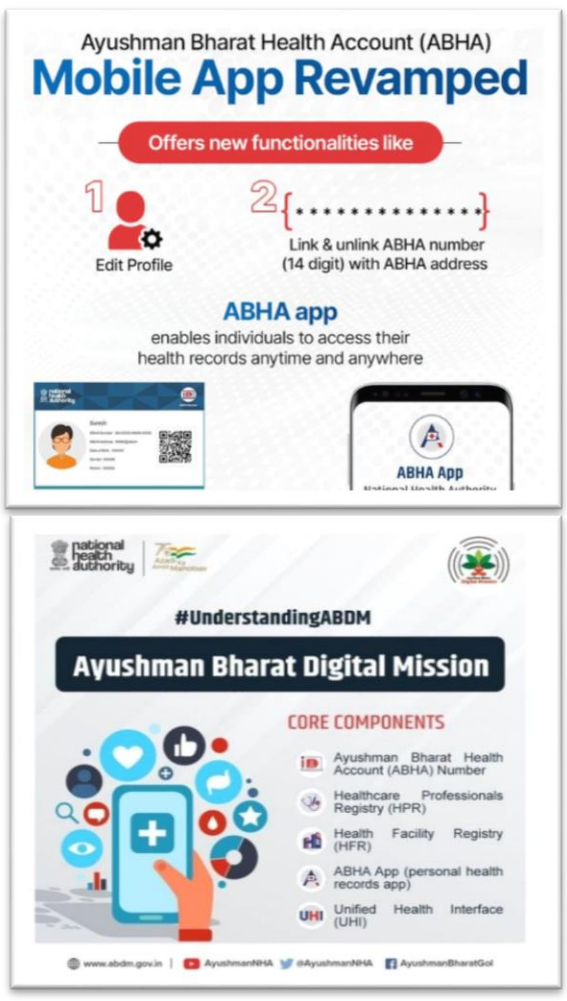
❖ **Context**

➢ Kolkata became **the first major metropolitan city in India** to prepare a detailed register of biodiversity**.**

❖ **Key Highlights**

- A **520-page documentation** of 399 plant and 283 animal species was unveiled at the Kolkata Municipal Corporation (KMC) headquarters.
- The **People's Biodiversity Register (PBR)**, which details flora and fauna forms within the city as well as its land uses and human activities, has been **prepared by KMC's Biodiversity Management Committee (BMC)**.
- It was supervised by West Bengal's biodiversity board with the help of non-profits organisations.
- The **Forest Survey of India's recent report** had flagged **Kolkata for the least greenery among all metro cities.**
- **Chandigarh and Indore** are other important cities to have prepared the document.
- The Ministry of Environment had framed Biological Diversity Rules 2004 by exercising power under Section 62 of the Biological Diversity Act 2002.
- Under the act & rules, every local body has to constitute a Biodiversity Management Committee (BMC).
- Under the rules, the main function of BMC is to prepare the People's Biodiversity Register in consultation with the local people.

ABHA Mobile App



❖ **Context**

➢ The **National Health Authority (NHA)** under its flagship scheme of **Ayushman Bharat Digital Mission (ABDM)** has announced the launch of a revamped **Ayushman Bharat Health Account (ABHA)** mobile application.

❖ **About:**

- The ABHA app was previously known as **NDHM Health Records app.**
- The ABHA mobile application enables an individual to create an ABHA address, an easy-to-remember username that can be linked with the **14-digit randomly generated ABHA number.**
- The mobile application also enables users to link their health records created at Ayushman Bharat Digital Mission compliant health facility and view them on their smartphones.
- The application also allows self-uploading of physical health records, along with sharing of digital health records such as diagnostic reports, prescriptions, CoWIN vaccination certificates after the consent of an individual.

❖ **About Ayushman Bharat National Digital Mission**

- It will ensure access to quality healthcare by promoting the use of technologies such as telemedicine and supporting the national portability of health services.
- Citizens can create their **ABHA (Ayushman Bharat Health Account)** numbers, to link their digital health records.
- The National Health Authority will be the implementing agency of the Ayushman Bharat Digital Mission (ABDM).
- It aims to create a National Digital Health ecosystem that supports universal health coverage in an efficient, accessible, inclusive, affordable, timely and safe manner.

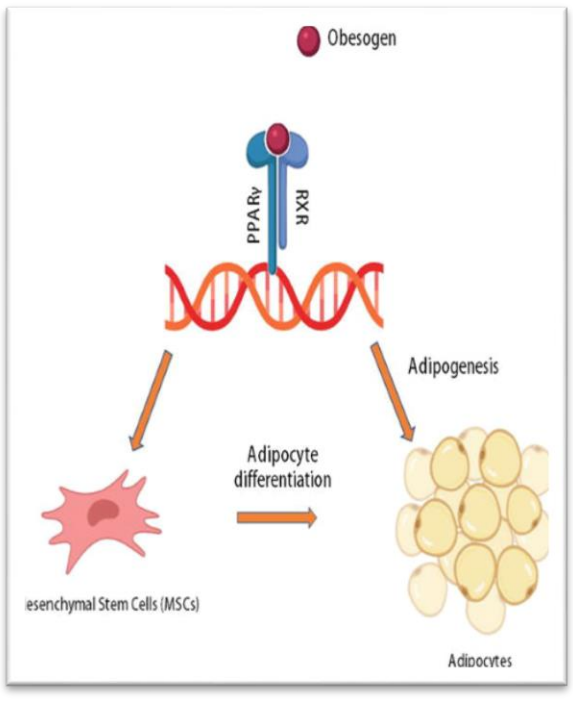
Obesogens

❖ **Context**

➢ Toxic levels of a class of chemicals called obesogens in the environment may be accelerating the worldwide obesity pandemic, according to a major scientific review.

❖ **Key Highlights**

- **Obesity has nearly tripled** across the world since 1975.

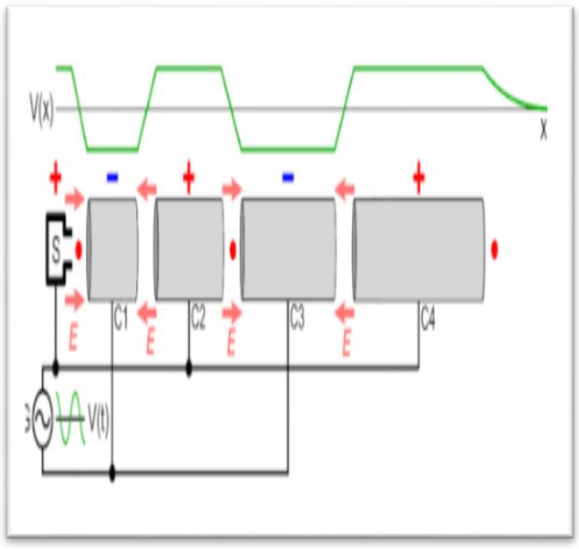


- Obesogens are a **subset of environmental chemicals** that act as **endocrine disruptors**, affecting metabolic endpoints.
- The review found that **obesogens can alter the balance between energy intake and energy expenditure.**
- The review identified about **50 chemical compounds**. These include **bisphenol A, phthalates** (which are broadly added to plastics), **perfluoroalkyl substances** (PFAs) compounds which are present in meals packaging, cookware and furnishings.

❖ How Do Obesogens Work?

- Obesogens work by **upsetting the body's metabolic thermostat.**
- The body's balance of energy intake and expenditure through activity relies on the **interplay of various hormones** from fat tissue, gut, pancreas, liver and brain.
- The pollutants can directly affect the **number and size of fat cells**, alter the **signals** that make people feel full, change **thyroid function** and the **dopamine reward system.**
- They can also affect the **microbiome in the gut** and cause weight gain by making the **uptake of calories from the intestines more efficient**.
- The **most sensitive time** for obesogen action is in **utero and early childhood**, in part via epigenetic programming that **can be transmitted to future generations**.

SIDDHARTH II



❖ Context

- ➢ It was launched recently on National Technology Day.

❖ About SIDDHARTH II

- It is **India's first most advanced & innovative SBRT enabled Linear Accelerator (LINAC)**. It is capable of performing treatment modalities like 3DCRT, VMAT, IMRT, SBRT and SRS.
- **India would be the third countr**y to achieve this feat. **England and Japan hold around 80% - 90 % of the global market.**
- This technology has been **developed** indigenously by **a private company** with handholding of **Technology Development Board,** DST.
- A linear particle accelerator (often shortened to LINAC) is a type of particle accelerator that accelerates charged subatomic particles or ions to a high speed by subjecting them to a series of oscillating electric potentials along a linear beamline.

❖ Boost for Make in India

- Currently, **India is the fourth largest medical devices market in Asia**, after Japan, China & South Korea and positioned 20th in the global market.
- **India imports about 86% of its requirement of medical equipment** and almost 100% of high-end medical equipment.

PARAM PORUL Supercomputer

❖ Context:

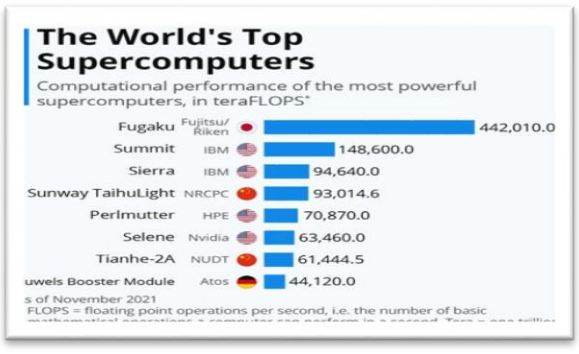
- ➢ PARAM PORUL, a state-of the art Supercomputer at NIT **Tiruchirappalli** dedicated **to the nation under National Supercomputing Mission (NSM)** - was inaugurated recently.

❖ Key Highlights:

- It is a joint initiative of **Ministry of Electronics and Information Technology (MeitY) and Department of Science and Technology (DST),**
- PARAM PORUL system is based on **Direct Contact Liquid Cooling technology** to obtain a **high power usage effectiveness** and **thereby reducing the operational cost**.

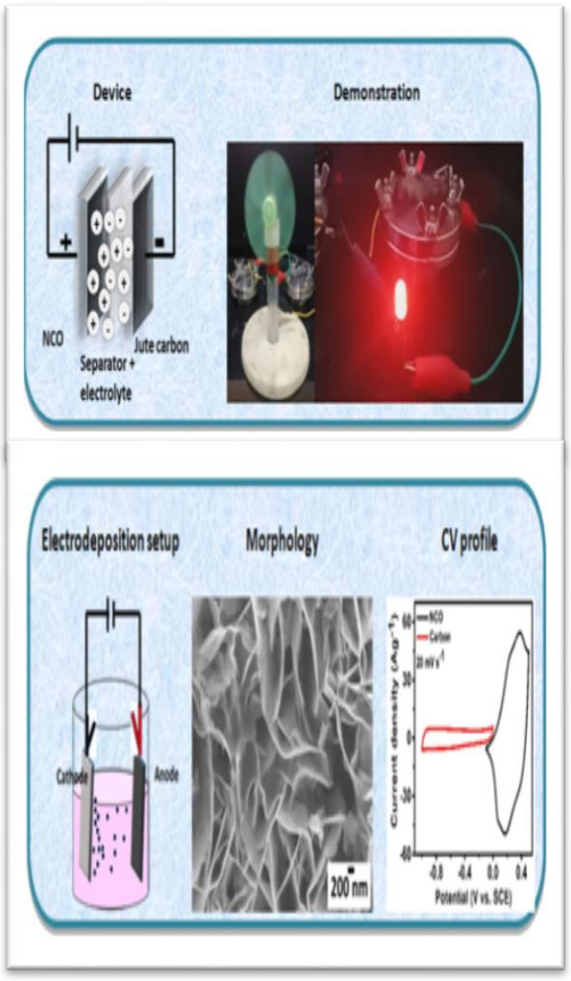
❖ Significance:

- Multiple applications from various scientific domains such as Weather and Climate, Bioinformatics, Computational Chemistry, Molecular Dynamics, Material Sciences, Computational Fluid Dynamics etc. has been **installed on the system for the benefit of researchers.**



- This high end computing system will be a **great value addition for the research community**. It would **aid researchers** to solve large-scale problems of different **fields of Science and Engineering.**
- A portion of the total compute power shall also be shared with the **nearby academic and research institutes as per the mandate of NSM.**
- Overall, this Supercomputing facility will provide a **major boost to the research and development initiatives** in Indian academia and industries to reach a position of global esteem.

High-Performance Hybrid Supercapacitors



❖ **Context:**

- Scientists have developed a **low-cost supercapacitor device** with excellent capacitive retention with a **novel electrode** material they have synthesized, which can **pave the way for the next generation high power-high energy storage devices.**

❖ **Key Highlights:**

- Scientists have developed a facile, scalable, and cost-effective electrochemical route to synthesize electrodes made of **Nickel cobaltite** ($NiCo_2O_4$) containing **nanosheet** structures with **incorporated oxygen vacancies as an active material,** for hybrid supercapacitors.
- These electrodes have been found to have excellent electrochemical performance.
- Such hybrid supercapacitors combine the features of both **conventional double layer supercapacitors and batteries and act as high power-high energy storage devices.**
- **Electrode**: An **electrode** is an electrical conductor used to make contact with a **nonmetallic part of a circuit** (e.g. a semiconductor, an electrolyte, a vacuum or air).Electrodes are essential parts of batteries that can consist of a **variety of materials depending on the type of battery.**

❖ **Significance:**

- This could be an effective alternative to the existing carbon-based electrodes for supercapacitors to achieve high energy density.
- Supercapacitors with high capacitance and excellent capacitive retention developed from low-cost fabrication techniques are the need of the hour, **considering their potential utility in the commercial market.**
- The device could power a LED lamp and a DC fan, as shown in the figure.

India-Bangladesh Navy exercise begins at Mongla port

❖ **Context:**

- The third edition of Indian Navy and Bangladesh Navy Bilateral exercise **Bongosagar** commenced at **Port Mongla, Bangladesh.**

❖ **Key Highlights:**

- The **Harbour Phase** of exercise is underway. It will be followed by a **Sea Phase** in the Northern Bay of Bengal.
- Exercise **Bongosagar** is aimed at **developing a high degree** of interoperability and joint operational skills through the conduct of a wide spectrum of maritime exercises and **operations between the two navies.**
- **Participants:** Indian Naval **Ships Kora,** an indigenously built Guided Missile Corvette, and **Sumedha**, an indigenously built Offshore Patrol Vessel are participating in the Exercise.
- Bangladesh Navy is being represented by **BNS Abu Ubaidah** and **Ali Haider**, both **Guided Missile Frigates.**
- **Harbour Phase**: The harbour phase of the exercise includes **professional and social interactions and friendly sporting fixtures**, in addition to the tactical level planning discussions on the conduct of the exercises at sea.
- **Sea Phase:** The sea phase of the exercise would **facilitate ships** from both the navies to participate in **intensive surface warfare drills**, weapon firing drills, seamanship evolutions, and coordinated air operations in a tactical scenario.