DEFENCE RESEARCH AND DEVELOPMENT ORGANISATION (DRDO)

The Central Government recently constituted a nine-member committee to overhaul the Defence Research and Development Organization (DRDO).

About Defence Research and Development Organisation (DRDO):

- It is the **R&D wing of the Ministry of Defence**, Govt of India, with a vision **to empower India with cutting-edge defence technologies** and a mission to **achieve self-reliance in critical defence technologies** and systems.
- It is **India's largest research organisation.**

Formation: The organisation was **formed in 1958 from the amalgamation of** the then already functioning **Technical Development Establishment (TDEs) of the Indian Army and the Directorate of Technical Development & Production (DTDP) with the Defence Science Organisation (DSO).**

- **Headquarters: New Delhi.**
- It **has a network of laboratories engaged in developing defence technologie**s covering various fields, like aeronautics, armaments, electronics, land combat engineering, life sciences, materials, missiles, and naval systems.

Major Projects:

- DRDO's **first projec**t for the Indian military **was in surface-to-air missiles (SAM) known as Project Indigo.** However, it received little success and was therefore discontinued.
- Since being set up, DRDO has ac**hieved many successes in developing major systems** and critical technologies **like aircraft avionics, UAVs, small arms, artillery systems,** EW Systems, tanks and armoured vehicles, sonar systems, command and control systems and missile systems.
- **In 2016, It successfully tested its first indigenously developed heavy-duty drone, Rustom 2,** which is an unmanned armed combat vehicle developed on the lines of the US's Predator drone.

- **DRDO co-developed INS Arihant**, **India's first nuclear ballistic missile submarine**, which became operational in 2018.
- **In March 2019, DRDO developed India's first anti-satellite system** that made India one of the space superpowers.
- DRDO has also **developed several ballistic missiles under its Integrated Guided Missile Development Programme**, which includes missiles like **Prithvi, Trishul, Agni, Akash and Nag.**

NATIONAL CURRICULUM FRAMEWORK (NCF)

Why in News?

- The National Curriculum Framework (NCF) was released by the Union Minister of Education recently.
- The draft proposals were released for public feedback in April 2023.
- The final/revised version of the NCF mandates teaching of 3 languages (including 2 Indian languages) in classes 9-10, and 2 languages (including 1 Indian language) in class 11-12.

What are the National Curriculum Frameworks (NCFs)?

- **The National Education Policy 2020 (NEP 2020)** aims to devise 4 NCFs, for which a comprehensive strategy has been worked out jointly by the Ministry of Education (MoE) and NCERT.
- **The National Steering Committee** under the chairmanship of (former ISRO chief) K. Kasturirangan was set up by the MoE to undertake and develop NCFs.
- These 4 NCFs are -
  - National Curriculum Framework for Early Childhood Care and Education (NCFECCE)
  - National Curriculum Framework for School Education (NCFSE)
  - National Curriculum Framework for Teacher Education (NCFTE)
  - National Curriculum Framework for Adult Education (NCFAE)

- **NCFs aims to bring about a paradigm shift in education** with focus on holistic development of children, emphasis on skilling, vital role of teachers, learning in mother tongue, cultural rootedness.
- The NCF has been revised four times in the past (in 1975, 1988, 2000, and 2005). If implemented, the suggested modification would be the **5th one**.
- It's important to note that the NEP 2020 and the NCFs, based on the education policy, **are not binding on the states**.

The Final Version of the NCFSE:

- **Holding the Class 12 board exam twice a year:** To ensure students have enough time and opportunity to perform well.
  - Students can appear for a board exam in subjects they have completed and feel ready for.
  - They will also be allowed to retain the best score.
- **Mandatory and optional subjects:**
  - So far, the students from Classes 9 to 12 studied five mandatory subjects, with an option of adding one more subject.
  - **Now, the number of mandatory subjects for Classes 9 and 10 is seven, and it's six for Classes 11 and 12.**
  - **Optional subjects have been grouped in three parts in the NCF**.
    - **The first optional group** includes art education (both visual and performing arts), physical education and vocational education.
    - **The 2nd group** includes Social Science, the Humanities, and interdisciplinary areas.
    - **The 3rd group** includes Science, Mathematics, and computational thinking.
- **Emphasis on Indian languages:** It mandates the compulsory instruction of 3 languages (referred to as R1, R2 and R3) up to Class 10. At least 2 of these 3 languages must be native to India.
  - In classes 11 and 12, students will have to study two languages and one of them has to be an Indian language.
- **Offers flexibility:**

- It offers students the freedom to pursue a mix of science and humanities to reduce the rigid boundaries separating arts, commerce and science in Classes 11 and 12 across school boards.
- It also offers freedom to all boards to change to **semester or term-based systems** in Class 12in the long term.

S-400 AIR DEFENCE MISSILE SYSTEM

About S-400 Air Defence Missile System:

- The **S-400 Triumf** (**NATO: SA-21 Growler**) is a **mobile, surface-to-air missile system**.
- It is **one of the world's most advanced air defence systems** that can **simultaneously track numerous incoming objects**.
- It was **developed by the Almaz Central Design Bureau of Russia.**
- The system e**ntered service in April 2007,** and the first S-400 was deployed in combat in August 2007.
- **India signed a US$ 5.5 billion deal with Russia in October 2018 to acquire five S-400 systems**.

Features:

- It is equipped with four different missiles that can engage enemy aircraft, ballistic missiles, and AWACS planes at 400 km and 250 km, medium-range at 120 km, and short-range at 40 km.
- The system can **simultaneously engage 36 targets.**
- The system is a l**arge complex of radars, control systems** and different types of missiles.
- The h**ighly automated S-400 has radars that can pick up an incoming object up to 1,000 kilometres away,** track several dozen incoming objects simultaneously and distribute the targets to appropriate missile systems.
- The c**ommand post detects, tracks and identifies the target.** Then, the tracked object is taken over by manned anti-aircraft missile systems of the complex, which launch the counterattack.

MERA BILL MERA ADHIKAR SCHEME

The Central Government is expected to launch its awaited 'Mera Bill Mera Adhikar' scheme soon.

About Mera Bill Mera Adhikar Scheme:

- It is a Goods and Services Tax (GST) **invoice incentive programme** that **offers cash incentives for uploading invoices.**
- It would **initially be introduced** in the states of **Assam, Gujarat, and Haryan**a, as well as the UTs of **Puducherry, Daman & Diu**, and **Dadra & Nagar Haveli.**
- **Objective**: To **encourage customers to request a bill** whenever they make purchases.

How does the scheme work?

- **All invoices issued by GST-registered suppliers to consumers will be eligible** for the scheme.
- **A monthly and quarterly draw of lots** will be made, and **winners will be eligible for cash reward** prizes beginning **from Rs 10,000 to up to Rs 1 crore.**
- The **minimum purchase value for the invoice** to be considered for the lucky draw **is Rs 200, and individuals can upload a maximum of 25 invoices in a month.**
- The **'Mera Bill Mera Adhikar' mobile app will be made available** on both IOS and Android platforms.
- The **invoice uploaded on the app should have the GSTIN of the seller, invoice number, amount paid and tax amount.**

NATIONAL CONSUMER DISPUTES REDRESSAL COMMISSION

Recently, the National Consumer Disputes Redressal Commission (NCDRC) dismissed an appeal filed by Cloudtail India Pvt. Ltd. challenging the Order passed by the Central Consumer Protection Authority (CCPA) with regard to the violation of the rights of consumers by the company.

About National Consumer Disputes Redressal Commission:

- It is a **quasi-judicial commission** in India, which was set up in 1988 under **the Consumer Protection Act of 1986.**
- The Commission is **headed by a sitting or a retired Judge of the Supreme Court of India** or a sitting or retired Chief Justice of the High Court.
- The Act mandates the establishment of **Consumer Protection Councils at the Centre** as well as in each State and District to promote consumer awareness.
- The Central Council is headed by **the Minister in charge of the Department of Consumer Affairs in the Central Government,** and the State Councils by the Minister in charge of Consumer Affairs in the State Governments.
- It also provides for **a 3-tier structure** of the National Commission, the State Commissions and the District Commissions for speedy resolution of consumer disputes.
- Its head office is in New Delhi.

Key Facts about the Central Consumer Protection Authority

- It is a regulatory body established in 2020 based on the provisions of the Consumer Protection Act, 2019.
- **Nodal Ministry:** The Ministry of Consumer Affairs.
- **Composition**
- It will have a **Chief Commissioner as head** and only two other commissioners as members, one of whom will deal with matters relating to goods while the other will look into cases relating to services.
- The CCPA will have an Investigation Wing that will be headed by a Director General.
- District Collectors, too, will have the power to investigate complaints of violations of consumer rights, unfair trade practices, and false or misleading advertisements.

WHY CHANDRAYAAN-3 LANDED ON THE SOUTH POLE OF THE MOON

India's Moon mission Chandrayaan-3 scripted history by successfully landing on the lunar surface. With the Lander accomplishing a 'soft landing' on the Moon's south pole, **India becomes the only country to have ever done so**.

What is a soft landing?

- Soft landing simply means landing at a gentle, controlled speed to not sustain damage to a spacecraft. Doing so showcases a spacecraft's technical capabilities.
- During a soft landing, the spacecraft undergoes a series of manoeuvres and braking techniques to reduce its velocity and align itself with the landing site.
  - This typically involves firing retro-rockets or thrusters to slow down the descent and make a controlled approach.
- The goal is to land the spacecraft gently without causing any significant damage.

Why is Chandrayaan-3 landing on the South Pole?

- All of the previous spacecraft (landed on the Moon) have landed in the region near the Moon's equator.
  - This is because it is easier and safer here.
  - The terrain and temperature are more conducive for a long and sustained operation of instruments.
  - Sunlight is also present, offering a regular supply of energy to solar-powered instruments.
- The polar regions of the Moon, however, are different. Many parts lie in a completely dark region without sunlight, and temperatures can go below 230 degrees Celsius.
- This creates difficulty in the operation of instruments. In addition, there are large craters all over the place.

Why South Pole is Significant?

- **Water**:
  - There is strong evidence that water ice is present in the permanently shadowed craters at the moon's south pole.
  - This water ice could be a valuable resource for future human exploration of the moon, as it could be used for drinking, growing food, and producing rocket fuel.
- **Volatiles:**

- In addition to water ice, the moon's south pole may also contain other volatiles, such as methane and ammonia.
- These volatiles could also be used as resources for future human exploration.

- **Geological insights**:
- The moon's south pole is also a geologically interesting place. The region is home to the South Pole-Aitken basin, the largest impact basin on the moon.
- Studying the South Pole-Aitken basin could provide insights into the Moon's formation and evolution.

- **Astronomical observations**:
- The moon's south pole is also a good location for astronomical observations.
- The permanently shadowed craters at the south pole are shielded from the Sun's radiation, which makes them ideal for observing radio waves and other forms of radiation that are blocked by the Earth's atmosphere.

ISRO'S PLANETARY EXPLORATIONS

Chandrayaan-1 –

- In the first four decades since its inception, ISRO largely focused on space missions that benefited India in some way or the other.
- However, with the approval of the **Chandrayaan-1 (2008)**, an Orbiter mission, ISRO began preparations to venture into planetary explorations.
- Six days after the launch, the Moon Impact Probe, which had the Indian colours on its sides, was made to crash land on the lunar surface — to leave India's mark on the Moon.
- With this, ISRO became the fifth country to reach the lunar surface. Chandrayaan-1's orbiter also detected evidence of water on the Moon.

Mars Orbiter Mission (MOM) –

- The next milestone for ISRO came in 2013, with the launch of **Mangalyaan** — the space agency's first interplanetary mission.

- ISRO was the only fourth agency to reach the Mars orbit after Russia's Roscosmos, USA's NASA, and the European Union's ESA.

Chandrayaan-2 –

- Chandrayaan-2 began its journey to the Moon in 2019.
- Its lander, called **Vikram**, was scheduled to make a soft-landing on the lunar surface but minutes before the scheduled touchdown, ISRO lost contact with the spacecraft.
- Vikram failed to reduce its velocity to an optimal level to ensure a soft-landing, and crashed into the lunar surface.

Chandrayaan-3 –

- Chandrayaan-3, launched on July 14, 2023, has successfully made a soft landing on the surface of the Moon, making India the first country to reach close to the lunar south pole.