Prelim Bits 25-11-2022 | UPSC Daily Current Affairs

Cordite

Explosion happened at the cordite section of the ordnance factory unit in Aruvankadu, Nilgiris.

- Cordite is a family of **smokeless propellants** developed and produced in the United Kingdom from 1889 to replace gunpowder as a military propellant.
- The cordlike shaped propellant is of the double-base type.
- The double-base propellants generally contain two bases and a stabilizer.
    1. Nitrocellulose (guncotton)
    2. A liquid organic nitrate (e.g., nitroglycerin) having the property of gelatinizing nitrocellulose
    3. Stabilizing agent (petroleum jelly)

Indian Ordnance Factories

- The Indian Ordnance Factories is the oldest and largest industrial setup which functions under the Department of Defence Production of the Ministry of Defence.
- Ordnance factories are divided into 7 Defence Public Sector Undertakings with 41 units across the country.
- The Ordnance Factories form an integrated base for indigenous production of defence hardware and equipment, with the primary objective of self-reliance in defence.

Cordite Factory

- Cordite Factory, Aruvankadu is located in the hilly region of Nilgiris, Tamil Nadu was established in the year 1904.
- It is the first smokeless propellant factory in India.
- The cordite factory in Aruvankadu manufactures nitrocellulose and nitroglycerine, which are mixed to make propellants for small arms and ammunition.

References

1. Indian Express - Explosion in cordite unit at ordnance factory
2. Directorate of Ordnance
3. Britannica - Cordite

Dhanushkodi

A family of five from Killinochi district, Sri Lanka, reached the Indian waters at first islet of Dhanushkodi.

Dhanushkodi literally translates into 'end of the bow', which denotes the legend of Lord Rama and Ramayana.

- The southernmost tip of the Pamban Island is called Dhanushkodi.
- It is one of the smallest towns in the world, with a length of just 50 yards.
- Dhanushkodi is the land border between Sri Lanka and India and is around 15 km away from Sri Lanka.
- The town of Dhanushkodi is surrounded by Bay of Bengal on one side and Indian Ocean on other side.



- **Ghost Town** - The town has been declared as a ghost town after the Rameshwaram cyclone hit the town in 1964.
- The town was completely washed away by the cyclone except for the Kothandaramasamy Temple.
- The town is mostly uninhabited ever since the cyclone and only few fishermen families live here.
- **Significance** - The ghost town is a famous tourist spot known for the cyclone ruins and the vast stretch of beach.
- The Gulf of Mannar Marine National Park is located between Tuticorin and Dhanushkodi.

References

1. The Hindu - Family of 5 from Sri Lanka reaches Dhanushkodi
2. GoTN – Ramanathapuram District

Leith's Soft-shelled Turtle

India's proposal for transferring Leith's Softshell Turtle to Appendix I of CITES has been adopted by CoP-19 to CITES at Panama.

- Leith's Softshell Turtle (*Nilssonia leithi*) is a large **fresh water** soft-shelled turtle which inhabits rivers and reservoirs.
- **Distribution** - Leith's Softshell Turtle is **endemic** to peninsular India.
- Its presence is substantial in the Cauvery, Tungabhadra, Ghataprabha, Bhavani, Godavari and Moyar drainages.



- **Food** – Feeds on fish, crabs, fresh water molluscs and mosquito larvae.
- Some turtles are kept in temple tanks, where they are fed with hibiscus flowers.
- **Threats** - Loss of habitat due to pollution and unchecked urbanisation.
- Poached for domestic illegal consuming and illegally traded abroad for meat and its calipee which are used in traditional Chinese medicine and soup delicacy.
- **Conservation**
    1. Wild Life (Protection) Act, 1972 - Schedule IV
    2. IUCN - Critically Endangered

3. CITES - Appendix I (Moved from Appendix II in COP-19 to CITES)

CITES and Turtles of India

- In COP-18 of CITES, **Indian star tortoises** were added to the Appendix I of CITES.
- In COP-19 of CITES, **Red-Crowned Roofed Turtle** was transferred from Appendix II to Appendix I of CITES.
- Leith's Softshell Turtle was also transferred from Appendix II to Appendix I of CITES in COP-19.

References

1. PIB - CITES protection to Leith's Soft-shelled Turtle
2. Down To Earth - Two Indian turtles added to threatened species list
3. IUCN - Leith's Softshell Turtle

Hyperspectral Imaging Satellite

The Bengaluru start-up will launch its third hyperspectral imaging satellite via ISRO's PSLV.

- Satellite imaging has various applications like disaster relief, agricultural monitoring, energy monitoring, urban planning, etc.
- There are three types of satellite imaging possible from space:
  1. Red-Green-Blue imaging
  2. Multispectral imaging
  3. Hyperspectral imaging
- Hyperspectral imaging (HSI) is a technique that analyses a wide spectrum of light to each pixel and captures data at hundreds of wavelengths.
- The light striking each pixel is broken down into many different spectral bands in order to provide more information on what is imaged.
- Thus the hyperspectral imaging collect the spectrum for each pixel present in an image of a scene.
- It gathers and analyses data from the whole electromagnetic spectrum.
- This sort of imaging help discover objects, identify materials in an image, which might not be possible in other two imaging techniques.

HysIS Satellite *is India's first hyperspectral imaging satellite for advanced Earth observation.*

Satellite Anand

- Anand is a hyper-spectral satellite developed by Bengaluru-based start-up Pixxel.
- Anand weighs less than 15 kilograms and can sustain over 150+ wavelengths.
- The satellite can detect gasses, methane leaks, underground oil, pest infestations and crops diseases early on.
- Pixxel became the first Indian company ever to launch a commercial satellite.

Satellite ‘Shakuntala’ was launched using SpaceX’s Falcon-9 rocket.

References

1. Indian Express – Anand Hyperspectral Imaging Satellite
2. Hindustan Times - ISRO's PSLV to launch Pixxel's satellite
3. Science Direct – Hyperspectral Imaging

Network Readiness Index 2022

India has improved its position by 6 slots and ranked 61st as per the Network Readiness Index 2022 report.

- India is now ranked 61st on the Network Readiness Index 2022 (NRI 2022) report with a score 51.19 (49.74 in 2019).
- India is ranked 3rd out of 36 in the group of lower-middle-income countries after Ukraine (50) and Indonesia (59).



- India has a score higher than the income group average in all pillars and sub-pillars.
- India secured top positions in few pillars and sub-pillars.

Pillars / Sub-pillars	Rank
AI talent concentration	1
Mobile broadband internet traffic within the country International Internet bandwidth	2
Annual investment in telecommunication services Domestic market size	3
ICT Services exports	4
FTTH/Building Internet subscriptions AI scientific publications	5

- The NRI Report maps the network-based readiness landscape of 131 economies.
- In the NRI 2022, the United States and Singapore ranks 1st and 2nd respectively.
- **Methodology** - The report covers a total of 58 variables which are based on their performances in 4 different pillars:
    1. Technology
    2. People
    3. Governance
    4. Impact
- **Prepared by** - Portulans Institute, an independent non-profit research and educational institute based in Washington DC.

References

1. PIB - India Climbs Up Six Slots In Network Readiness Index 2022
2. Live Mint - India Ranks 61st On Network Readiness Index 2022

3. The Network Readiness Index

