

1. Railway unveils a new signalling system

Why in news?

- ◆ Modernization of the signalling system in the Indian railways.

Highlights:

- ◆ The Railways will roll out its new signalling system from April 2020 onwards.
- ◆ The modernization of the signalling system will include implementation of technologies such as the automatic train protection system that helps in adhering to permissible speed limits without driver intervention and the 4G-based mobile train radio communication system, which can be used for emergency communications.
- ◆ A centralized traffic control system similar to the air traffic control system is being envisaged.
- ◆ A remote diagnostic and predictive maintenance system will also be implemented to supplement the proposed upgrade.
- ◆ The implementation will begin with four sections of about 640 route kilometres with an estimated cost of around ₹1,810 crores.
- ◆ This is expected to be a pilot project for pan-India implementation of the nearly ₹78,000 crore project to modernize the signalling system.

Significance:

- ◆ The new signalling system is expected to make train travel faster and safer.
- ◆ The implementation of these new systems will also improve safety, reduce congestion, increase line capacity and improve punctuality.
- ◆ The system will act as a pilot for signal modernization across the 70,000 km network of the Railways.

2. Mission Shat Pratishat

Why in News?

- ◆ The Punjab Education Department recently launched Mission Shat Pratishat to achieve 100 per cent result in classes 5, 8, 10, and 12 of government schools.

Mission Shat Pratishat:

- ◆ The Mission was launched in September 2019 by the Punjab education department.
- ◆ It aimed to improve the results of the government schools in terms of pass percentage in the 10th and 12th board examinations.

- ◆ There are hundreds of government schools, mostly primary and middle, that do not have enough teaching staff.
- ◆ WhatsApp groups of teachers, students, and parents by different subject teachers have been formed to ensure proper coordination as well as sharing of good practices.
- ◆ The teachers and students are being sensitized about the structure of the question papers through Edusat (Education Satellite).
- ◆ Model question papers have been prepared for every subject and students are being made to solve them.
- ◆ The government school teachers have voluntarily been taking extra classes not only during working days but also on Sundays and holidays.

3. Carbon Dots

Why in News?

- ◆ In an extraordinary waste-to-wealth feat, researchers from Assam have used the commonly found invasive plant water hyacinth to produce carbon nanoparticles.

Carbon Dots:

- ◆ The researchers harvested water hyacinth leaves, removed the chlorophyll, dried and powdered it.
- ◆ The sieved powder underwent several treatments including heating at 150 degree Celsius to convert it to carbon dots.
- ◆ When a nanoparticle is less than 10 nanometres call it a dot or nanodot.
- ◆ These carbon dots were able to give a green fluorescence under UV light.
- ◆ These extremely tiny (less than 10 nanometres) particles can be used for detecting a commonly used herbicide – pretilachlor.
- ◆ The nanoparticles were found to be selective and sensitive for the detection of the herbicide.
- ◆ Some teams are exploring if its fibre can be used to make furniture.

4. 19th India-Iran joint commission.

Why in news?

- ◆ Meeting of the 19th India-Iran joint commission.

Highlights:

- ◆ External Affairs Minister Subrahmanyam Jaishankar met with Iranian Foreign Minister Javad Zarif for a meeting of the 19th India-Iran joint commission.
- ◆ Discussions were held on closer bilateral relations and regional and global issues affecting the two countries.
- ◆ The two countries have agreed on accelerating the Chabahar project.
- ◆ Iran had expressed that it was disappointed that India had stopped all oil imports from Iran following the sanctions by the United States.
- ◆ Iran's Ambassador Ali Chegeni had earlier suggested that India's adherence to U.S. sanctions was also affecting Chabahar port development plans.
- ◆ Recently, a senior U.S. official made it clear that it would continue its "narrow exemption" to India to develop the Chabahar port, recognizing its role as "as a lifeline to Afghanistan in terms for India to be able to export humanitarian supplies and potentially helping Afghanistan diversify its export opportunities."
- ◆ Subsequently, diplomats from India, Iran and Afghanistan met in Delhi and discussed several new initiatives for the trilateral project at Chabahar.

5. Pinaka missile system

Why in news?

- ◆ India's indigenously developed Pinaka missile system, which is capable of striking up to range of 75 kilometres, was successfully flight-tested, a boost to its artillery power.

Highlights:

- ◆ Pinaka is a multi-barrel rocket launcher (MBRL) produced in India and developed by the Defence Research and Development Organisation (DRDO) for the Indian Army.
- ◆ The earlier version of Pinaka system, known as Mark-I has the maximum range of 40 km for Mark-I while the latest version, known as Mark-II, has the range of 75 km.
- ◆ Pinaka Mark-II rocket is modified as a missile by integrating the navigation, control and guidance system to improve the end accuracy and enhance the range.
- ◆ Pinaka missile system was designed to replace the BM-21 multiple rocket launcher system of the Indian Army. Mark-I was used in Kargil War.
- ◆ The navigation system of the missile is aided by the Indian Regional Navigation Satellite System (IRNSS).

6. Bar-headed goose

Why in news?

- ◆ Bar-headed goose, a rare goose species was sighted in the wetlands of Karingali Puncha in Kerala.
- ◆ The Puncha is a major birding spot in the district which reported the highest bird count in the Asian Waterfowl Census of 2015.

About Bar-headed geese:

- ◆ Its Scientific name is *Anser Indicus*.
- ◆ It is found in central China and Mongolia and they breed there.
- ◆ Its IUCN Status is **Least Concern**.
- ◆ They start migration to the Indian sub-continent during the winter and stay here till the end of the season.
- ◆ Their migration has been a fascination for birders as they cross the Himalayas on one of the most high-altitude migrations in the world.

