
1. Starship Project

Why in News?

- SpaceX has recently launched an uncrewed test flight of its Starship cruise vessel from the Super Heavy rocket. However, the vehicle exploded when the upper-stage Starship failed to separate from the lower-stage Super Heavy.

Highlights

- It is a private company founded in 2002 by Elon Musk.
- SpaceX's Starship spacecraft and Super Heavy rocket – collectively referred to as Starship – represent a fully reusable transportation system designed to carry both crew and cargo to Earth orbit, the Moon, Mars and beyond.
- Starship will be able to carry up to 150 metric tonnes fully reusable and 250 metric tonnes expendable.
- Starship Super Heavy is powered by an array of Raptor engines, which are fueled by liquid methane (CH₄) and liquid oxygen (LOX).
- A total of 33 Raptor engines power the first-stage booster.
- It leverages tanker vehicles (essentially the Starship spacecraft minus the windows) to refill the Starship spacecraft in low-Earth orbit.
- Development and manufacturing of Starship takes place at Starbase, one of the world's first commercial spaceports designed for orbital missions.
- Starlink provides high-speed, low-latency broadband internet across the globe.
- Its high-speed, low-latency service is made possible via the world's largest constellation of highly advanced satellites operating in a low orbit around the Earth.
- Starshield leverages Starlink technology and launch capability to support national security efforts.
- While Starlink is designed for consumer and commercial use, Starshield is designed for government use.