

CHANDRAYAAN-3'S LANDING SPOT ON MOON TO BE KNOWN AS SHIV SHAKTI POINT

Why in news?

- PM Modi announced that the point where the Chandrayaan-3 lander touched down on the lunar surface would be named Shiv Shakti.
- He was addressing the ISRO scientists at the ISRO Telemetry Tracking and Command Network (ISTRAC) in Bengaluru after his arrival from Greece.

Chandrayaan-3

• About

- The Chandrayaan-3 is India's third lunar mission.
- It consists of an indigenous lander module (LM), propulsion module (PM), and a rover.
- Its objective is to develop and demonstrate new technologies required for inter-planetary missions.

• Objectives

- The mission had 3 objectives:
 - Demonstration of a Safe and Soft Landing on the Lunar Surface is accomplished
 - Demonstration of Rover roving on the moon is accomplished
 - Conducting in-situ scientific experiments – This step is going on. All payloads are performing normally.

• Modules

- The propulsion module is the one that will take the lander and the rover to the moon.
- The lander module contains the rover. After the touchdown, the lander will remain stationary at the landing site, while the rover will explore the moon.

• National Space Day

- He announced that **August 23**, the day the Chandrayaan-3's lander made a historic soft-landing on the Moon will be commemorated as National Space Day.
- National Space Day will celebrate the spirit of Science, Technology and Innovation, and inspire us for an eternity.
- He asked ISRO to organise national hackathons on space technology in governance in collaboration with various departments of the Centre and the State governments.
- He also called upon students across the country to take part in a huge quiz competition on the Chandrayaan mission organised by MyGov from September 1.

India now among first-world countries

- India has become the fifth-largest economy in the world and it is now among the first-world countries.
- In the journey from third row to first row, institutions like our ISRO have played a huge role.
- **Scientifically prove the astronomical formulas in the scriptures of India**
- He urged the younger generation of the country to come forward to scientifically prove the astronomical formulas in the scriptures of India.

NASA, SPACEX LAUNCH SENDS FOUR ASTRONAUTS FROM FOUR COUNTRIES TO ISS

Why in news?

- NASA and SpaceX's Dragon spacecraft has blasted off carrying four astronauts to the International Space Station (ISS).
- Known as Crew-7, the mission includes four astronauts from four countries - the US, Denmark, Japan, and Russia.
- This was the first US take-off in which all the astronauts atop the spacecraft belonged to a different country.
- Until now, NASA had always included two or three of its own on its SpaceX flights.



CROSS & CLIMB ROHTAK



International Space Station (ISS)

- ISS is a large spacecraft in **low Earth orbit** largely by the United States and Russia, with assistance and components from a multinational consortium.
- It is habitable spacecraft that orbits Earth at an average altitude of approximately 420 kilometers (260 miles).
- It serves as a unique and collaborative space laboratory, research facility, and living space for astronauts and cosmonauts from various countries.

Features of ISS

• Construction and Ownership

- The ISS is a joint project involving space agencies from multiple countries.
- The major partners include NASA (United States), Roscosmos (Russia), ESA (European Space Agency), JAXA (Japan Aerospace Exploration Agency), and CSA (Canadian Space Agency).
- In 2022, Russia announced that **it will pull out of ISS after 2024** and focus on building its own orbiting outpost.
- These agencies have contributed modules, components, and resources to construct and maintain the station.

• Size and Structure

- The ISS is quite large, with a mass of around 460 tons and a habitable volume roughly equivalent to the interior of a Boeing 747 aircraft.
- It consists of various interconnected modules and components, including laboratories, living quarters, and docking ports.

• Orbit and Duration

- It travels at 17,500 mph. This means it orbits Earth every 90 minutes.
- This means that crew members on board experience multiple sunrises and sunsets each day.
- Missions typically last six months, although some crew members may stay for shorter or longer durations.

• International Crew

- The ISS is continuously inhabited by a rotating crew of astronauts and cosmonauts from different nations.
- These crew members live and work on the station for several months at a time, conducting experiments, maintaining systems, and performing various tasks necessary to keep the station operational.

Why Is the Space Station Important?

- One of the primary purposes of the ISS is to conduct scientific research and experiments in the unique microgravity environment of space.
- Microgravity is often referred to as **near zero gravity or weightlessness**.
- Researchers from around the world use the station to study a wide range of fields, including biology, physics, astronomy, and Earth sciences.
- The ISS has contributed to our understanding of topics such as human health in space, materials science, and climate change.
- The space station has made it possible for people to have an ongoing presence in space. Human beings have been living in space every day since the first crew arrived.

[NATIONAL ENVIRONMENTAL ENGINEERING RESEARCH INSTITUTE \(NEERI\)](#)

The CSIR's National Environmental Engineering Research Institute recently said it would develop a grid-based mitigation strategy to tackle the air pollution problem in Delhi.



About National Environmental Engineering Research Institute (NEERI):

- It is a **premier research institute** created and **funded by the Government of India** dedicated to **environmental science and engineering**.
- The institute's **primary mission is to conduct research and development activities** related to various aspects of **environmental management, pollution control, and sustainable development**.
- NEERI falls under the **Ministry of Science and Technology** of the central government.

- It was established in Nagpur in 1958 with a focus on water supply, sewage disposal, and communicable diseases, and to some extent on industrial pollution and occupational diseases found common in post-independent India.
- **Headquarters: Nagpur**
- NEERI has five zonal laboratories at Chennai, Delhi, Hyderabad, Kolkata and Mumbai.
- **Organizational Expertise: Climate/Environment, Health, Lab or Field Testing, Monitoring and Evaluation, Policy Development, Research, Standards, Technology and Fuel R&D.**

Key Facts about the Council of Scientific and Industrial Research (CSIR):

- It is one of India's premier scientific and industrial research organisations.
- It was established as an autonomous body by the government of India in 1942 to promote scientific knowledge and boost industrialisation and economic growth.
- It is now one of the largest publicly funded R&D organisations in the world.
- **Headquarters: New Delhi**
- CSIR maintains a large network of national laboratories and field stations and employs thousands of scientists, researchers, and support staff.
- **Prominent laboratories: Cellular and Molecular Biology (Hyderabad), the Central Electronics Engineering Research Institute (Pilani), the Central Institute of Mining and Fuel Research (Dhanbad), the National Aerospace Laboratories (Bengaluru), the National Institute of Oceanography (Goa), and the National Botanical Research Institute (Lucknow).**

WHAT ARE COIL GUNS?

The Chinese navy is reportedly testing the planet's most powerful coil gun.



About Coil Guns:

- It is a type of **electromagnetic weapon** capable of launching projectiles with extremely high speed in the blink of an eye.
- They are also known as **Gauss guns** or magnetic accelerators.

- It operates on the principle of electromagnetic induction, applying the principles of electromagnetism to propel a projectile.

How does it Work?

- Coil guns feature a series of coils arranged along the barrel of the gun, each one constituting a stage.
- Each coil is energised one after another to create a magnetic field that can levitate and propel a projectile forward.
- The projectile typically stays suspended in the centre of the coil during launch.
- The larger a coil gun, the better its ability to fire projectiles similar to those fired by traditional artillery.

Projectile:

- The projectile used in a coil gun is typically a ferrous or magnetic object, such as a steel ball or a specially designed ferromagnetic projectile.
- This projectile needs to have magnetic properties to interact with the electromagnetic fields generated by the coils.

Advantages over traditional artillery:

- Higher launch speeds and a **shorter preparation time**.
- Coil guns **do not use gunpowder or other chemical propellants**, which means they produce no combustion byproducts.
- **High Precision:** They can be highly accurate due to the precise control over the electromagnetic coils.
- **Low Recoil:** They have much lower recoil compared to firearms.

WHAT IS PARBOILED RICE?



The Central Government recently imposed a 20% export duty on parboiled rice.

About Parboiled Rice:

- Parboiled rice, also called converted rice, is partially precooked in its inedible husk before being processed for eating.
- It happens before rice is milled, that is, before the inedible outer husk is removed to yield brown rice but before brown rice is refined to make white rice.
- In some Asian and African countries, people have been parboiling rice since ancient times as it makes the husks easier to remove by hand.

The main steps of parboiling are

- **Soaking:** Raw, unhusked rice, also called paddy rice, is soaked in warm water to increase the moisture content.
- **Steaming:** The rice is steamed until the starch converts into a gel. The heat of this process also helps kill bacteria and other microbes.
- **Drying:** The rice is slowly dried to reduce the moisture content so that it can be milled.
- **Husking:** The dried, partially cooked rice is then milled to remove the outer husk. The result is parboiled rice.
- Parboiling changes the colour of rice to a light yellow or amber, which differs from the pale, white colour of regular rice.
- During parboiling, some water-soluble nutrients move from the bran of the rice kernel into the starchy endosperm. This minimises some of the nutrient loss that normally happens during refining when making white rice.

Benefits:

- Parboiling rice improves its texture, increases its shelf life, and provides health benefits.
- Parboiled rice is higher in fibre and protein than white rice.
- Parboiling reduces the stickiness of rice, so it yields fluffy and separate kernels once cooked.
- Additionally, parboiling inactivates the enzymes that break down the fat in rice. This helps prevent rancidity and off-flavors, increasing shelf-life

- Notably, parboiled rice has **significantly more thiamine and niacin than white rice**. These nutrients are **important for energy production**.
- **Potential downsides:**
- It's **less nutritious than brown rice**.
- It **takes a little longer to cook**.

TELE-LAW 2.0

Recently, the Tele-Law 2.0 initiative was launched by the Department of Justice, Ministry of Law & Justice.



About Tele-Law 2.0:

- This version entails the fusion of **Tele-Law Services with Nyaya Bandhu pro bono legal services**, a merger to further enhance citizen accessibility to legal aid.
- The integration of **legal guidance, support, and representation through** a single registration process stands as a testament to the commitment to nurture a digitally literate and empowered populace.

What is Tele-Law programme?

- This was launched by the Department of Justice, Ministry of Law and Justice in 2017.
- This is operating under **the DISHA Scheme**.
- The programme connects needy and marginalised people in need of legal aid with the Panel Lawyers via video conferencing/telephonic facilities available at Common Service Centres (CSCs) situated at the panchayat level.
- In addition, the service can also be accessed through the Tele-Law Mobile App.

Eligibility: Legal advice is made available to everyone under the Tele-Law service. Advice is free of Cost to those who are eligible for free legal aid under Section 12 of the LSA Act, 1987.

SEETHAKALI

The Perinad Seethakali Sangham member group is all set to perform outside Kerala for the first time.



About Seethakali:

- It is a unique centuries-old folk art form that is believed to have originated at Perinad in the Kollam district of Kerala.
- This art form was first performed some 150 years back by the people of **Vedar and Pulayar communities**.
- **Themes**
 - It is based on certain episodes taken from **the Indian epic Ramayana**.
 - Mythic characters such as Rama, Seetha, Ravana and Hanuman come alive in Seethakali performances that portray the tale of Seetha's journey, from the time she accompanied Rama to the woods till her ascent to the heavens.
- In the early times, Seethakali was performed as part of the harvest festival Onam.
- From Atham star till the 28th day after Onam, the performers who belong to the subaltern communities go from one house to another performing this art.
- **The props and instruments** used during performances are all made of **natural materials like bamboo and palm leaves**.
- The characters of Rama and Laxmana appear in green since the colour is used to represent gods and goddesses in Kathakali.
- Currently, in Kerala, there is only one registered Seethakali performing group – Perinad Seethakali Sangham.