

LOK SABHA TAKES UP CENTRAL UNIVERSITIES (AMENDMENT) BILL, 2023 FOR CONSIDERATION

Why in news?

- The Lok Sabha took up the Central Universities (Amendment) Bill, 2023 for consideration and passing.
- The Bill seeks to establish a Central Tribal University in Telangana which will be named ‘Sammakka Sarakka Central Tribal University’.

The Legend of Sammakka and Sarakka:

- **About**
 - **Sammakka** is said to have been married to Pagididda Raju, a feudal chief of the **Kakatiyas**(a Deccan dynasty) who ruled the **Warangal area**.
 - She had two daughters and one son - **Sarakka/ Saralamma**, Nagulamma and Jampanna, respectively.
 - **In the 13th-century**, in a battle against the local rulers in protest against the imposition of taxes, Saralamma died while Sammakka disappeared into the hills.
 - The local (**Koya**) tribals believed that she (Sammakka) metamorphosed into a vermillion casket.
- **The Sammakka Saralamma Jatara:**
 - Mulugu district of Telangana holds a biennial festival - the Sammakka Saralamma Jatara - often referred to as the Kumbh Mela of the tribals.
 - The event commemorates the battle of the mother-daughter duo against the imposition of taxes on the Koya people.

Key highlights

- **It amends the Central Universities Act, 2009**
 - The Bill amends the Central Universities Act, 2009 which was enacted to establish and incorporate universities for teaching and research in various states.
- **Name of the central tribal university**

- The university is named in honour of legendary mother-daughter duo Sammakka and Sarakka.
 - **Will cater to the regional aspirations**
 - The establishment of Sammakka Sarakka Central Tribal University will cater to the regional aspirations for years to come.
 - It will provide avenues of higher education and research facilities primarily for the tribal population of India.
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114 SEATS, MIGRANT QUOTA CLEARED FOR J&K ASSEMBLY

Why in the News?

- The Lok Sabha passed the Jammu and Kashmir Reorganisation (Amendment) Bill, 2023 and the Jammu and Kashmir Reservation (Amendment) Bill, 2023.

About Jammu and Kashmir Reorganisation (Amendment) Bill, 2023:

- The Jammu and Kashmir Reorganisation (Amendment) Bill, 2023 was introduced in Lok Sabha in July, 2023.
- The Bill amends the **Jammu and Kashmir Reorganisation Act, 2019**.
 - The Act provides for the reorganisation of the state of Jammu and Kashmir into the union territories of Jammu and Kashmir (with legislature) and Ladakh (without legislature).

Key Features of the Jammu and Kashmir Reorganisation (Amendment) Bill, 2023:

- **Number of seats in the Legislative Assembly:**
 - The Second Schedule of the Representation of the People Act, 1950 provides for the number of seats in legislative assemblies.
 - The 2019 Act amended the Second Schedule of the 1950 Act to specify the total number of seats in the Jammu and Kashmir Legislative Assembly to be 83.
 - It reserved six seats for Scheduled Castes.
 - No seats were reserved for Scheduled Tribes.
 - The **Bill increases the total number of seats to 90**.

- It also reserves 7 seats for Scheduled Castes and 9 seats for Scheduled Tribes.
- The increase is based on the report of the **Delimitation Commission**.
- **Nomination of Kashmiri migrants:**
 - The Bill adds that the **Lieutenant Governor may nominate up to 2 members from the Kashmiri migrant community** to the Legislative Assembly.
 - One of the nominated members must be a woman.
 - Migrants are defined as persons who migrated from the Kashmir Valley or any other part of the state of Jammu and Kashmir after **November 1, 1989**, and are registered with the Relief Commissioner.
 - Migrants also include individuals who have not been registered due to:
 - being in government service in any moving office,
 - having left for work, or
 - possessing immovable property at the place from where they migrated but are unable to reside there due to disturbed conditions.
- **Nomination of displace persons:**
 - The Bill adds that the Lieutenant Governor may nominate to the Legislative Assembly 1 member representing displaced persons from **Pakistan-occupied Jammu and Kashmir**.
 - Displaced persons refer to individuals who left or were displaced from their place of residence in Pakistani-occupied Jammu and Kashmir and continue to reside outside such place.
 - Such displacement should have taken place in **1947-48, 1965, or 1971** due to civil disturbances or fear of such disturbances.
 - These include successors-in-interest of such persons.

CHANDRAYAAN-3 PROPULSION MODULE RETRACES STEPS TO EARTH ORBIT

- Scientists have brought the Propulsion Module (PM) of the Chandrayaan-3 mission back into Earth orbit.

What is Chandrayaan-3 Mission?



- Chandrayaan-3 is a follow-on mission to Chandrayaan-2 (2019) to demonstrate ISRO's end-to-end capability in safe landing and roving on the Moon's surface.

- It comprises an indigenous propulsion module, lander module (called **Vikram**), and a rover (called **Pragyaan**) with the objective of developing and demonstrating new technologies

required for inter-planetary missions.

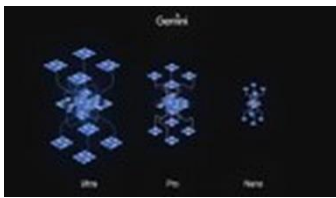
- The propulsion module, other than carrying the lander and rover configuration till about 100 km lunar orbit, carries the Spectro-polarimetry of Habitable Planet Earth (**SHAPE**) payload to study spectral and polarimetric measurements of the Earth from lunar orbit.
- On August 23rd, Vikram Lander made its historic touchdown on Moon and subsequently Pragyaan rover was deployed.
- With the success of Chandrayaan-3, India joined **United States, Russia, and China** as one of the few countries to successfully **land on the Moon**.

What is a Propulsion Module in Chandrayaan-3?

- The propulsion module is a box-shaped component of the Chandrayaan-3 spacecraft powered by solar panels.
- With regard to Propulsion Module, the main objective was to ferry the Lander module to the final lunar polar circular orbit and separate the Lander.
- Subsequent to separation, SHAPE payload in the PM was also operated.
- The initial plan was to operate this payload for about three months during the mission life of PM.
- On December 4th, the ISRO announced that it had moved Chandrayaan-3's PM out of lunar orbit and placed it high above Earth for a bonus mission, where it now survives on leftover fuel.

- The new experiment will demonstrate technologies that will help Indian scientists bring samples from the moon to Earth someday, ISRO said.
 - The ISRO has not revealed what it plans to do with the spacecraft when it runs out of fuel.
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GEMINI AI MODEL



Recently, Google announced the launch of its latest, most powerful AI model, Gemini.

About Gemini AI model:

- It is a new **multimodal general AI model**, which means it can understand, and work with **different formats**, including text, code, audio, image, and video, at the same time
 - It is **now available** to users across the world through Bard, some developer platforms and even the new Google Pixel 8 Pro devices.
 - It can understand, explain and generate high-quality code in the world's most popular programming languages, like Python, Java, C++ and Go.
 - It comes in three sizes — the yet -to-be-launched **Ultra, Pro and Nano**.
 - **Gemini Ultra**, the largest and most capable model, will be meant for highly complex tasks. It is available now **only to select customers**, developers, partners and safety and responsibility experts for early experimentation and feedback.
 - **Gemini Pro** will be best at scaling across a wide range of tasks and is now **available in Bard** for regular users across the world.
 - **Gemini Nano** will manage **on-device tasks** and is already available on Pixel 8 Pro, powering new features like Summarise in the Recorder app and Smart Reply via Gboard.
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JAMUN TREE

Recently, researchers at the Indian Institute of Science Education and Research, Bhopal (IISER Bhopal), have completed the first-ever genome sequencing of the jamun tree (*Syzygium cumini*).



About Jamun tree:

- It is also known as jambolan, or black plum tree and is a **Myrtaceae plant family tropical tree.**
 - Its natural range includes the **Indian sub-continent and South-East Asia.**
 - The genus Syzygium contains 1,193 recognised species, including jamun.
 - **Soil**
 - It can be grown on a wide range of soils.
 - However, for high yield potential and good plant growth, **deep loam and a well-drained soil are needed.**
 - It can grow well under salinity and waterlogged conditions too.
 - **Climate**
 - It prefers to **grow under tropical and subtropical climate.**
 - It is also found growing **in lower ranges of the Himalayas** up to an altitude of 1300 metres.
 - It **requires dry weather** at the time of flowering and fruit setting.
 - In subtropical areas, early rain is considered to be beneficial for ripening of fruits and proper development of its size, colour and taste.
 - **Benefits:** In Ayurveda the black plum is used to treat ailments such as **stomach discomfort, arthritis, cardiac problems**, flatulence, asthma, diarrhoea, and stomach spasms.
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MINING FOR CRITICAL MINERALS

Why in news?

- Twenty blocks of critical minerals are currently on auction for commercial mining by the private sector.
- The bidding process began on November 29, and bids can be submitted until January 22 next year.

What are Critical Minerals?

- A **mineral is critical** when the risk of supply shortage and associated impact on the economy is (relatively) higher than other raw materials.
- These minerals are **essential for economic development and national security**, and their lack of availability/ the concentration of extraction/ processing in a few geographical locations could potentially lead to **supply chain vulnerabilities**.
- These (such as lithium, graphite, cobalt, titanium, and rare earth elements) are essential for the advancement of many sectors, including **high-tech electronics, telecommunications, transport, and defence**.
- **It forms part of multiple strategic value chains**, including -
 - **Clean technologies** initiatives such as zero-emission vehicles, wind turbines, solar panels;
 - **Information and communication technologies**, including semiconductors; and
 - **Advanced manufacturing inputs and materials** such as defence applications, permanent magnets, ceramics.

Recent Efforts by the Indian Govt to Boost its Critical Minerals Sector

- **Identification of 30 Critical Minerals by the Indian Govt**
 - In July 2023, released a list of 30 critical minerals for India.
 - These minerals are Antimony, Beryllium, Bismuth, Cobalt, Copper, Gallium, Germanium, Graphite, Hafnium, Indium, Lithium, Molybdenum, Niobium, Nickel, PGE, Phosphorous, Potash, REE, Rhenium, Silicon, Strontium, Tantalum, Tellurium, Tin, Titanium, Tungsten, Vanadium, Zirconium, Selenium and Cadmium.
- **Allowed mining**
 - The govt amended a key law to allow for the mining of three critical minerals, lithium, niobium, and REEs, earlier this year.
 - To attract bidders, the government also specified new royalty rates for critical minerals, matching global benchmarks.

- **Increased exploration work by Geological Survey of India**
 - The Geological Survey of India has taken up 125 projects in the current fiscal to explore critical mineral reserves in the country.
 - It had carried out mineral exploration in Salal-Haimna areas (Reasi district, J&K), and estimated 5.9 million tonnes of lithium ore.
 - In the preceding eight fiscal years, a total of 625 mineral exploration projects were undertaken.
- **Centre of Excellence for Critical Minerals**
 - Report of the Committee on Identification of Critical Minerals, released in June 2023, recommended that a Centre of Excellence for Critical Minerals should be established.
 - This is to frame policies and incentives for creating a complete value chain of critical minerals in the country.
- **Khanij Bidesh India Ltd. (KABIL)**
 - A joint venture company namely Khanij Bidesh India Ltd. (KABIL) is mandated to identify and acquire overseas mineral assets of critical and strategic nature (lithium, cobalt) to ensure supply side assurance.
- **The Mineral Security Partnership (MSP)**
 - India has recently been inducted into MSP.
 - It is a US-led collaboration of 14 countries that aims to catalyse public and private investment in critical mineral supply chains globally.

WHAT IS THE SOLAR ORBITER?

The European Space Agency's Solar Orbiter recently captured the most detailed image of the Sun's full disc and outer atmosphere, the corona, to date.



About Solar Orbiter:

- It is a **Sun-observing satellite** with 10 science instruments, all designed to provide unprecedented insight into how the sun works.



CROSS & CLIMB ROHTAK



- It is conceived to perform a **close-up study of our Sun and inner heliosphere**-the uncharted innermost regions of our Solar System.
 - It is a **joint mission of the European Space Agency (ESA) and NASA**.
 - It is the **most complex scientific laboratory ever** to have been sent to the Sun.
 - It will **take images of the Sun from closer than any spacecraft** before and, for the first time, look at its uncharted polar regions.
 - The mission, launched on February 10, 2020, released its first images in June of that year.
 - After multiple gravitational assist manoeuvres at Earth and Venus, it started its full science operations in December 2021.
 - It follows an elliptical orbit around the sun, with the closest point, the perihelion, at about 25 million miles (40 million kilometres) from the sun, which is closer than the orbit of Mercury.
 - **Instruments:** It carries **six remote-sensing instruments to observe the Sun** and the solar corona and **four in-situ** instruments to measure the solar wind, energetic particles, and electromagnetic fields.
 - The mission is **scheduled to last until at least 2027**.
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