

October - 16

TNPSC BITS

- ❖ India's Pankaj Advani claimed his 25th world title in billiards final at the World Championships held at Kuala Lumpur, Malaysia.

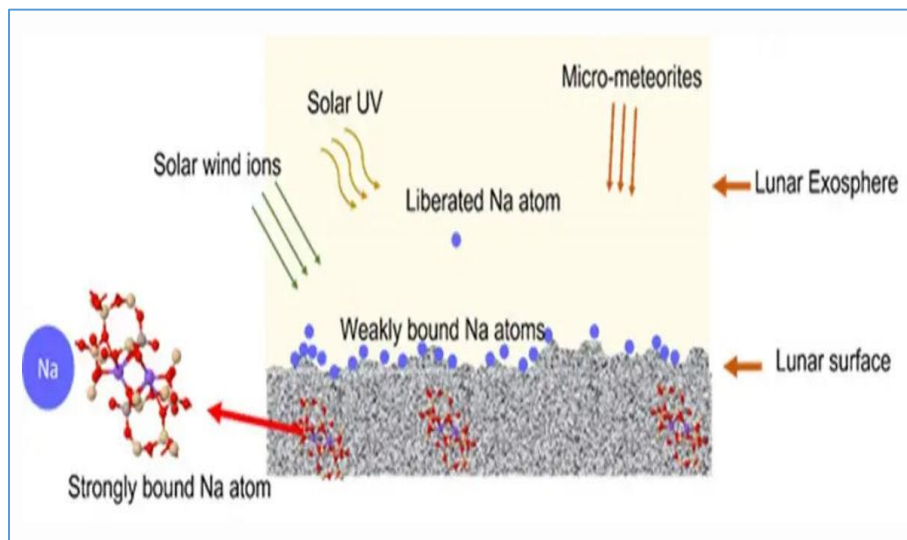
ECONOMY

Gross direct tax collection

- ❖ Gross direct tax collections including corporate and personal income tax rose nearly 24 per cent so far in the current financial year.
- ❖ This includes a 32.3 per cent growth in personal income tax (including Securities Transaction Tax) mop up and 16.73 per cent increase in corporate tax revenues over the same period last year.
- ❖ The Budget had estimated direct tax collection at Rs 14.20 lakh crore this fiscal.

SCIENCE AND TECHNOLOGY

Abundance of sodium on moon

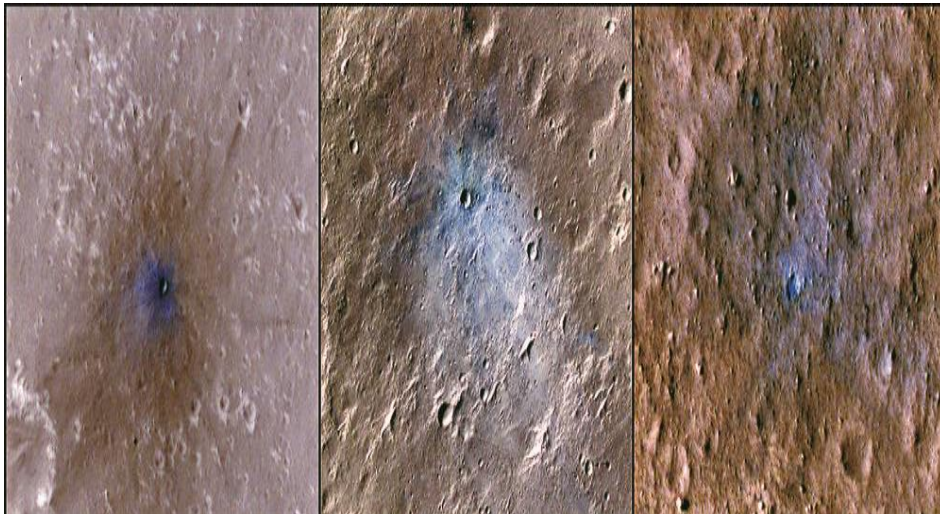


- ❖ The X-ray spectrometer 'CLASS' on the Chandrayaan-2 Orbiter has mapped an abundance of sodium on the moon for the first time.
- ❖ CLASS stands for Chandrayaan-2 Large Area Soft X-ray Spectrometer.

- ❖ These sodium atoms can be nudged out of the surface by solar wind or ultraviolet radiation more easily than if they were part of the lunar minerals.
- ❖ Chandrayaan-1 X-ray Fluorescence Spectrometer (C1XS) detected sodium from its characteristic line in X-rays.

Space rocks hitting Mars

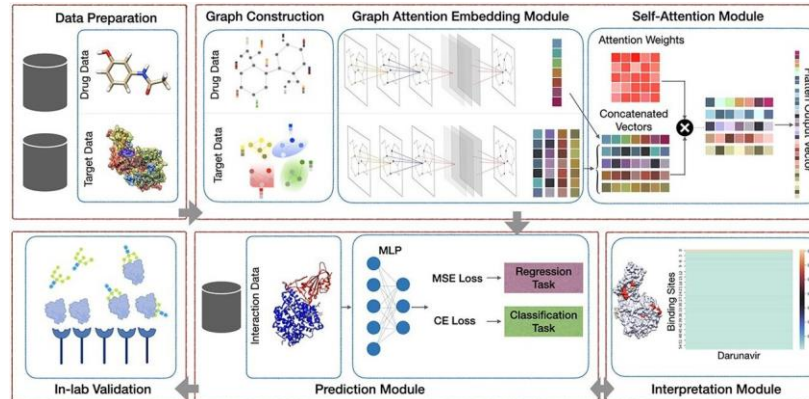
- ❖ The NASA InSight Lander has 'heard' and detected the vibrations of four space rocks hitting the surface of Mars over the past two years.
- ❖ This is the first time a mission has picked up both seismic and acoustic waves from an impact.
- ❖ It is also InSight's first detection of impacts since landing on Mars in 2018.
- ❖ The space rocks InSight tracked - one landing in 2020 and the other three in 2021.
- ❖ Mars is proximity to our solar system's asteroid belt.
- ❖ It is far more vulnerable than Earth to being struck by space rocks.



AI based drug screening technique

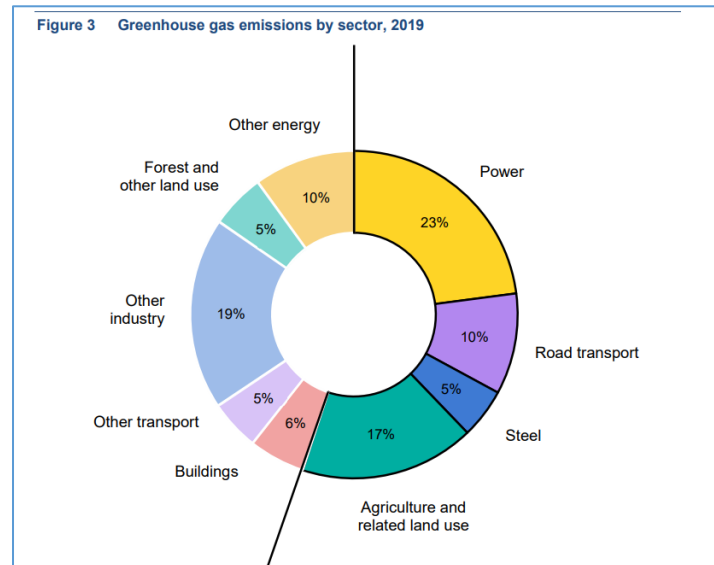
- ❖ Researchers have found a new artificial intelligence-based drug screening technique.
- ❖ Using this technique, they gained up to 97% accuracy in identifying promising drug candidates.
- ❖ The technique reinforces drug-protein interactions through words for each protein binding site.

- ❖ It uses deep learning to extract the features that govern the complicated interactions between the two.



ENVIRONMENT

The Breakthrough Agenda Report 2022



- ❖ It was released by the International Energy Agency (IEA), the International Renewable Energy Agency (IRENA) and the UN Climate Change High-Level Champions.
- ❖ It assesses progress on reducing emissions in five key sectors – power, hydrogen, road transport, steel and agriculture.
- ❖ It is a first-of-its-kind annual progress report, requested at the UN Climate Change Conference COP26 in November 2021.
- ❖ It covers more than two-thirds of the global economy, with endorsement from 45 world leaders, including those of the G7, China and India.

- ❖ The five sectors analysed in the report together account for nearly 60% of global greenhouse gas (GHG) emissions.

Net-zero carbon emissions - 2050

- ❖ All 193 International Civil Aviation Organization (ICAO) members have pledged to support the long-term aviation goal (LTAG) of net-zero carbon emissions by 2050.
- ❖ The announcement comes after several years of planning and preparations following the historic Paris Agreement in 2015.
- ❖ The aviation industry currently contributes to around 2.4% of global emissions from fossil fuel use.



Leopards in Asola Bhatti Wildlife Sanctuary



- ❖ Leopards have been sighted in Delhi's Asola Bhatti Wildlife Sanctuary for the first time since 1940.
- ❖ Eight leopards have been sighted in the Asola Bhatti Wildlife Sanctuary.
- ❖ This sanctuary has not recorded sightings of leopards since the year 1940.
- ❖ Asola Bhatti Wildlife Sanctuary is situated at the border between Haryana and Delhi on the Aravalli hill range's Southern Delhi Ridge.
- ❖ It spans across Southern Delhi and northern parts of Haryana's Faridabad and Gurugram districts.
- ❖ It is part of the Northern Aravalli Leopard Wildlife Corridor.

Jurassic reptile

- ❖ Researchers have discovered a new extinct species of lizard-like reptile that lived among dinosaurs.
- ❖ *Opisthiamimus gregori* lived in North America during the Jurassic period about 150 million years ago.
- ❖ It was the same time as dinosaurs *Stegosaurus* and *Allosaurus*.
- ❖ The reptile belongs to the same lineage as the tuatara, which is found in New Zealand.



STATES

Chhattisgarh Olympic

- ❖ Chhattisgarh chief minister has inaugurated the state's own Olympics.

- ❖ It aims to provide a CenterStage to the village level sports so that a feeling of pride for the culture is inculcated.
- ❖ It also revives the age-old-tradition of traditional games namely 'langdi', 'bhaura', 'bati' (kancha), and 'pitthul'.
- ❖ A total 14 types of traditional sports have been included in the Chhattisgarh Olympics 2022-23.



MISCELLANEOUS

Made-in-India drone



- ❖ Indian cricketer Mahendra Singh Dhoni has launched a quadcopter consumer camera drone named 'Droni'.
- ❖ The made-in-India camera drone with advanced features is manufactured by Garuda Aerospace.

- ❖ It is offering drone solutions for agricultural pesticide spraying, solar panel cleaning, industrial pipeline inspections, mapping, surveying, public announcements, and delivery services.

“The Merge” of the Ethereum



- ❖ Ethereum is the world’s second most valuable cryptocurrency.
- ❖ Ethereum completed its migration from Proof-of-Work (PoW) to Proof-of-Stake (PoS) on mainnet.
- ❖ It is also known as the Merge.
- ❖ It promises to ramp up security of the cryptocurrency while claiming to cut down on its carbon footprint.
- ❖ ‘The Merge’ will make transactions on the Ethereum network extremely secure.
- ❖ Ethereum is a decentralised cryptocurrency.
- ❖ It does not have institutions like banks approving the transactions that happen on its network.

Enceladus Ocean

- ❖ Enceladus is sixth largest moon of Saturn.
- ❖ Recently, A team of scientists have discovered dissolved phosphorus in the subsurface ocean of Saturn's moon Enceladus.
- ❖ It is providing new evidence for a key building block for life Enceladus has an ice-covered water ocean that erupts into space.
- ❖ It forms a plume that contains almost all of the basic requirements of terrestrial life, according to observations made by the Cassini spacecraft.

- ❖ Phosphorus is an element that is essential to the DNA, biofilms and bones that make up living organisms.
- ❖ Phosphorus can only be used by organisms if it is dissolved in water.
- ❖ The water on Enceladus is highly alkaline and oxygen-free compared to the water on Earth.

