

## UPSC Daily Current Affairs| Prelim Bits 03-03-2025

### Blue Ghost Mission 1

#### Why in News?

*Firefly Aerospace, U.S. Company successfully landed its spacecraft on the Moon recently.*

- It is the **second private mission** to make a soft lunar landing.
- It is Nicknamed '**Ghost Riders in the Sky**'.
- **Aim** - To land for a site near **Mons Latreille**, a volcanic feature in Mare Crisium on the Moon's northeastern near side.

*Mare Crisium, once an ancient asteroid impact site, formed around 3 billion years ago when volcanic eruptions filled the basin with basaltic lava.*

- **Launch Vehicle** - SpaceX Falcon 9 rocket.
- **Size** - 2 metres tall and 3.5 meters wide.
- **Instruments** - It carries 10 instruments, including
  - A lunar soil analyzer,
  - A radiation-tolerant computer and
  - An experiment testing the feasibility of using the existing global satellite navigation system to navigate the moon.
- It is engineered for stability with shock-absorbing feet, a low centre of mass, and a broad footprint. It incorporated flight-proven technologies.
- Its Reaction Control System (RCS) thrusters fired as needed, ensuring a controlled and smooth landing.
- **Functions** - It will operate its payloads for a full lunar day (14 Earth days).
- On March 14, it will capture high-definition images of a total eclipse, where Earth blocked sunlight from reaching the Moon.
- On March 16, it will record the lunar sunset, gathering data on how solar activity causes lunar dust to levitate, a phenomenon first observed by **Apollo 17 astronaut Eugene Cernan**.
- As part of **NASA's Commercial Lunar Payload Services (CLPS)** initiative, Blue Ghost Mission 1 delivered 10 scientific and technological instruments to the lunar surface.
- **Scientific contributions** - Blue Ghost's payloads will contribute to lunar research through groundbreaking experiments, including
  - Testing regolith collection,
  - Global navigation satellite system capabilities,
  - Radiation-resistant computing, and
  - Lunar dust mitigation.

## Commercial Lunar Payload Services (CLPS) program

- It is a collaboration with commercial companies to deliver science and technology to the Moon.
- **Agency** - National Aeronautics and Space Administration (NASA).
- The program is intended to support NASA's Artemis lunar program.
- **Functions** - NASA contracts with companies to deliver payloads to the Moon.
- Companies bid on the services, including launching, landing, and payload integration.
- The contracts are indefinite delivery, indefinite quantity contracts.

## References

1. [The Hindu | Blue Ghost Mission 1](#)
2. [Hindustan Times | 'Ghost Riders in the Sky'](#)

## Chairman of Securities and Exchange Board of India (SEBI)

### Why in News?

*Union government has recently appointed Finance and Revenue Secretary Tuhin Kanta Pandey as the new chairman of the Securities and Exchange Board of India (SEBI) for 3 years.*

- **Appointed by** - The government via notification from the Appointments Committee of the Cabinet (ACC).
- **Age limit** - 65 Years.
- **Term** - The Chairman shall hold office for **5 years**, as many be specified in the order of his appointment.
- **Appointed under** - Securities and Exchange Board of India (Terms and Conditions of Service of Chairman and Members) Rules, 1992.
- **Appointments committee** - Financial Sector Regulatory Appointments Search Committee consists
  - Cabinet Secretary - Chairman
  - Additional Principal Secretary to the Prime Minister - Member
  - Secretary, Department of Economic Affairs - Member
  - Three outside experts of repute in the fields of Finance, Economics, Law, Public Administration, Financial Markets and related subjects maintained by it - Member.
- **Pay** - Chairman shall have the option to receive pay as admissible to a Secretary to the Government of India.
- **Entitlement to PF** - The Chairman or a whole-time Member shall be entitled to subscribe to the General Provident Fund.
- The Chairman shall **not accept** any employment before the expiry of a period of 1 year from the date of demitting the office in SEBI, except with the previous sanction of the Central Government.
- The Central Government **shall have power** to relax the provisions of any of these rules with respect to any class or category of persons.

## Securities and Exchange Board of India (SEBI)

- It is a **statutory body** and a market regulator, which controls the securities market in India.
- **Aim** - To protect the interests of investors in securities and to promote and regulate the securities market.
- **Board** - SEBI is run by its board of members.
- The board consists of
  - A Chairman and
  - 2 members from the finance ministry,
  - 1 member from Reserve Bank of India and
  - 5 other members are also nominated by the Centre.
- **Headquarters** - Mumbai.
- **Regional offices** - Ahmedabad, Kolkata, Chennai and Delhi.

## References

1. [Business Standard | New SEBI chairman](#)
2. [The Hindu | SEBI Chairman](#)

## Geological Survey of India

### Why in News?

*Geological Survey of India (GSI), one of the nation's oldest and prestigious scientific institutions, hosted a 'Grand Walkathon' themed 'Geoscience for a safe world' recently as part of its 175<sup>th</sup> anniversary celebrations.*

- It is a **repository of geological information** required in various fields in the India.
- It has also attained the status of a geo-scientific organisations of international repute.
- **Founded in** - 1851.
- It was primarily established to explore coal deposits for the railways.
- **Nodal Ministry** - At present, the Geological Survey of India is an attached office of the Ministry of Mines.
- **Headquarters** - Kolkata.
- **Regional offices** - Lucknow, Jaipur, Nagpur, Hyderabad, Shillong and Kolkata and state unit offices in almost all the states of the country.
- **Functions** - Its main functions relate to creating and updating of national geoscientific information and mineral resource assessment.
- Objectives achieved through ground surveys, air-borne and marine surveys, mineral prospecting and investigations, multi-disciplinary geological, geotechnical, geo-environmental, natural hazards studies.
- It is also by glaciology, seismological studies, and fundamental research.
- It provides impartial and up-to-date geological expertise and geoscientific information of all kinds, with a focus on policy making decisions, commercial and socio-economic needs.
- GSI also emphasises on systematic documentation of all geological processes, both surface and subsurface, of India and its offshore areas.

- The organisation carries out this work through geological, geophysical, & geochemical surveys using the latest and most cost-effective techniques and methodologies.
- GSI's core competence in survey and mapping is continuously enhanced through accretion, management, coordination and utilization of spatial databases.
- It functions as a 'Repository' for the purpose and uses the latest computer-based technologies for dissemination of geoscientific information and spatial data.

## Reference

[The Hindu | Geological Survey of India \(GSI\)](#)

## Maple Syrup Urine Disease (MSUD)

### Why in News?

*Scientists have created a new gene therapy for a debilitating genetic disorder called maple syrup urine disease (MSUD).*

- **Recent Findings** - The treatment can prevent recurrence of deadly symptoms in a cow calf born with the disease.
- It prevented newborn death, normalized growth, restored coordinated expression of the affected genes and stabilized biomarkers in a calf as well as in mice.
- **Maple syrup urine disease (MSUD)** - It is a ***rare genetic disorder*** characterized by deficiency of an enzyme complex (branched-chain alpha-keto acid dehydrogenase).
- Branched-chain alpha-keto acid dehydrogenase is required to break down (metabolize) the 3 branched-chain amino acids (BCAAs) leucine, isoleucine and valine, in the body.
- The result of this metabolic failure is that all 3 BCAAs, along with a number of their toxic byproducts, (specifically their respective organic acids), all accumulate abnormally.
- In the classic, severe form of MSUD, plasma concentrations of the BCAAs begin to rise within a few hours of birth.
- If untreated, symptoms begin to emerge, often within the first 24-48 hours of life.
- **Types** - The classic type, intermediate type, intermittent type and possibly a thiamine-responsive type.
- **Cause** - When a mutated form of the BCKDHA, BCKDHB or DBT gene is inherited from both parents.
- **Symptoms** - Non-specific symptoms of increasing neurological dysfunction and include lethargy, irritability and poor feeding, soon followed by
  - Focal neurological signs such as abnormal movements, increasing spasticity and shortly thereafter, by seizures and deepening coma.
- It is characterized by a ***distinctive sweet odor in the urine***, reminiscent of maple syrup.
- **Risk level** - If untreated, progressive brain damage is inevitable and death occurs usually within weeks or months.
- **Treatment** - The disorder can be successfully managed through a specialized diet in which the three BCAAs are rigorously controlled.
- However, even with treatment, patients of any age with MSUD remain at high risk for

developing acute metabolic decompensation (metabolic crises).

- Often triggered by infection, injury, failure to eat (fasting) or even by psychological stress.

## Reference

[The Hindu | Maple syrup urine disease](#)

## Hipposideros Srilankaensis

### Why in News?

A global research team from Osmania University have identified and described a new species of bat.

- It is a new species of ***leaf-nosed bat species***.
- **Endemic to** - Sri Lanka.
- **Taxonomy**
  - **Scientific Name** - *Hipposideros srilankaensis*.
  - **Family** - Hipposideridae.
- **Named after** - Its ***endemic nature to Sri Lanka***.
- **Habitat** - Found in *dense forests to caves*.
- **Morphology** - A broad noseleaf, distinct ear shape, and cranial characteristics distinct from the Indian *Hipposideros brachyotus*.
- **Uniqueness** - Genetic analysis further confirmed its distinctiveness from other closely related species in the region.



## Hipposideros brachyotus

- It is a species previously considered a subspecies of ***Hipposideros galeritus***.
- The research confirmed that it is a distinct species ***endemic to India*** and reclassified it as *Hipposideros brachyotus*.
- **Uniqueness** - Genetic analysis further confirmed its distinctiveness from other known species in the region.
- Echolocation call analysis further supported its classification.

36 species of bats are found in India and that Hyderabad is home to 14 different species of bats.

## References

1. [The Hindu| New Bat Species](#)
2. [Zootaxa| Hipposideros Srilankaensis](#)

### One Liners 03-03-2025

#### History, Art and Culture

##### Dholavira

- It is a *UNESCO World Heritage Site*.
- **Location** - Arid island of Khadir in Kachchh district, *Gujarat*.
- **Features** - Advanced *town planning* skills with:
  - Sophisticated water conservation system,
  - Well-structured reservoirs and
  - Urban settlements and so on.
- **Significance** - It is one of the most well-preserved archaeological sites in the subcontinent, showcasing architectural and engineering brilliance of the *Harappan people*.

#### Geography

##### Planetary Parade

- **About** - It is a rare alignment in which all seven other planets in our solar system will line up in the night sky.
- All 7 *planets and Moon* will align on the same side of the Sun.
- **Planets visible to the naked eye** - Mercury, Venus, Mars, Jupiter and Saturn.
- **Planets visible through telescope** - Uranus and Neptune.
- This rare cosmic event *won't happen again until 2040*.

#### Polity & Governance

##### Aadhaar Good Governance Portal

- **About** - It is a digital platform to *streamline approval process* for Aadhaar authentication requests.
- **Launched by** - Ministry of Electronics and Information Technology (MeitY).
- **Provision** - Under the Aadhaar Authentication for Good Governance (**S**ocial **W**elfare, **I**nnovation, **K**nowledge) Rules, 2020.
- **SWIK ((Social Welfare, Innovation, Knowledge) Rules** - It were introduced as a facilitating provision to section 4(4) (b)(ii) of the Aadhaar (Targeted Delivery of Financial and Other Subsidies, Benefits and Services) Act, 2016.



### **Baroda Kisan Pride Scheme**

*Bank of Baroda will shortly launch Baroda Kisan Pride scheme in Karnataka.*

- **Aim & objectives** - To encourage farmers to adopt scientific practices in agriculture.
- To provide adequate and timely cash credit facility to farmers at competitive pricing.
- **Eligibility Criteria:**
  - Corporate/Companies of individual farmers.
  - Farmer's Producer Organizations/ Farmer's Producer Companies.
  - Proprietorship/Partnership firms.
  - Co-operatives of farmers/Joint borrowers
  - Large individuals /Other individual farmers
  - Lease cultivators
- **Loan amount** - Rs.5 lakh to 10 crore.

### **Sugamya Yatra**

- **Aim** - To break myths associated with wheel chair users, promote accessibility and encourage inclusivity in society.
- **Organized on** - International Wheel chair Day, 2025 (March 1<sup>st</sup>).
- **Organized by:**
  - Department of Empowerment of Persons with Disabilities (DEPwD).
  - Ministry of Social Justice and Empowerment (MSJE).
  - Chief Commissioner for Persons with Disabilities (CCPD).

## **Economy**

### **M-score Methodology**

- **About** - It is a mathematical model that uses financial ratios and 8 variables to identify whether a company has manipulated its earnings.
- **Developed by** - Messod Beneish.
- **Uses** - To uncover financial fraud.

### **Gender Budget (GB)**

- **Union Budget allocation, 2025** - A record of Rs.4, 49,028.68 crore was allocated to the Gender Budget (GB) in Budget 2025-56.
- **Rise in allocation** - 37.3% increase from FY24 and accounting for 8.86% of total Budget.
- **Reason for rise in allocation** - It is primarily due to the inclusion of PM Garib Kalyan Anna Yojana, as it accounts for 24% of General Budget.

## **Security**

### **Exercise Desert Hunt 2025**

- It is an integrated Tri-Service Special Forces exercise.
- **Conducted by** - Indian Air Force.
- **Elite Para (Special Forces)** - Indian Army, Indian Navy and Indian Air Force.
- **Aim** - At enhancing interoperability, coordination and synergy among the 3 Special Forces units.
- To ensure swift and effective response towards emerging security challenges.

## **Miscellaneous**

### **Tuhin Kanta Pandey**

- He was appointed as 11<sup>th</sup> chairperson of the Securities and Exchange Board of India (SEBI).
- **Appointment approval by** - Appointment Committee of the Cabinet.
- **Tenure** - 3 years.

### **United Nations World Wildlife Day (WWD)**

- **Celebrated on** - *3<sup>rd</sup> March*, every year.
- **Objective** - To celebrate *wild animals & plants*, recognize their unique roles and contributions of wildlife to people and the planet.
- **Theme, 2025** - Wildlife Conservation Finance: Investing in People and Planet.
- **WWD, 2025** - Will serve as a platform for exchange and exploration of innovative financial solutions for *wildlife conservation*.

